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FIG. 1

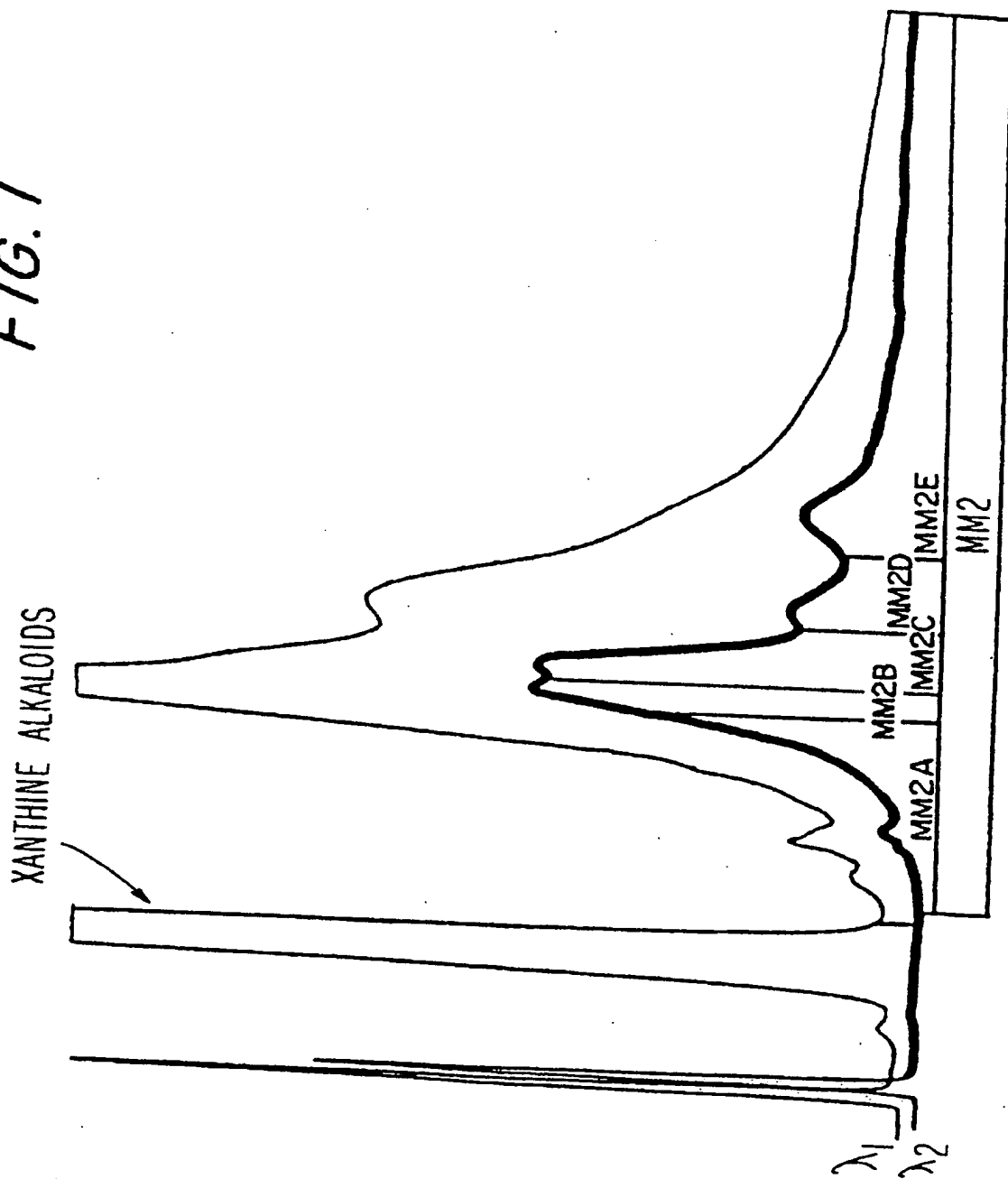
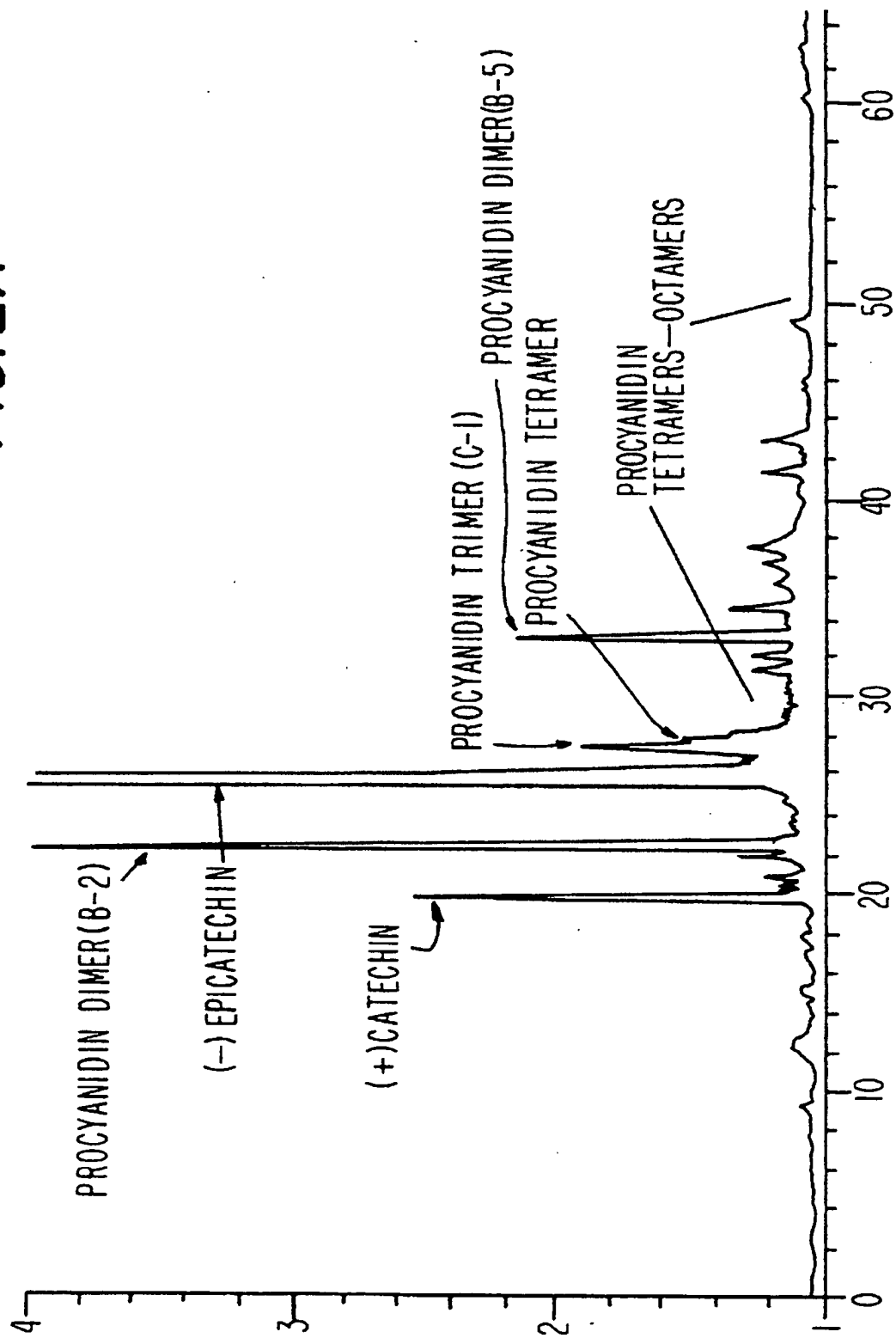
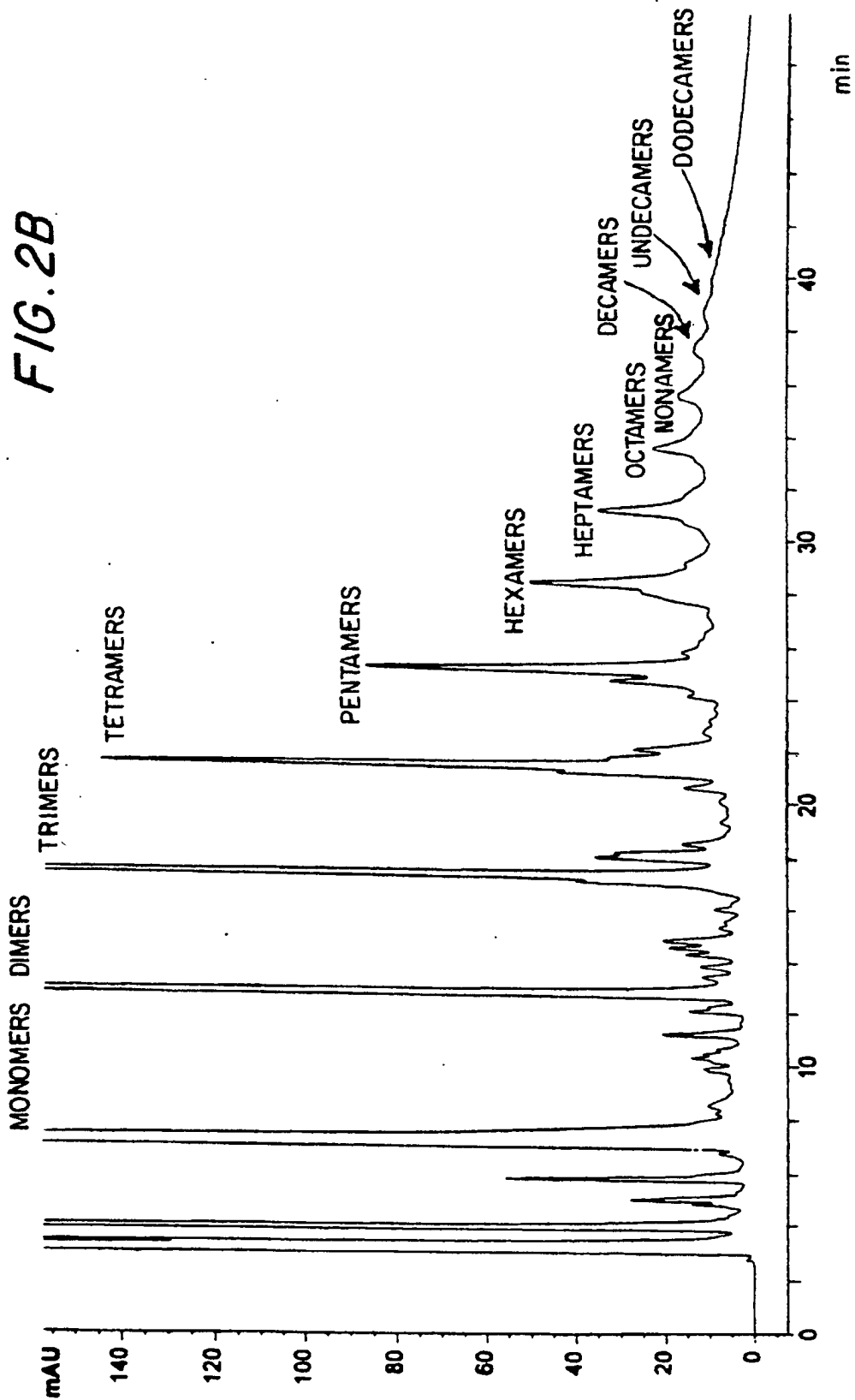
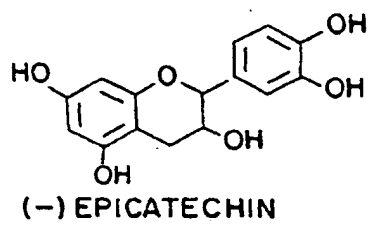


FIG. 2A



DADI A, Sig = 280, 4 Ref = 580, 40 of 4078/009-0401.D





PROCYANIDIN B-5

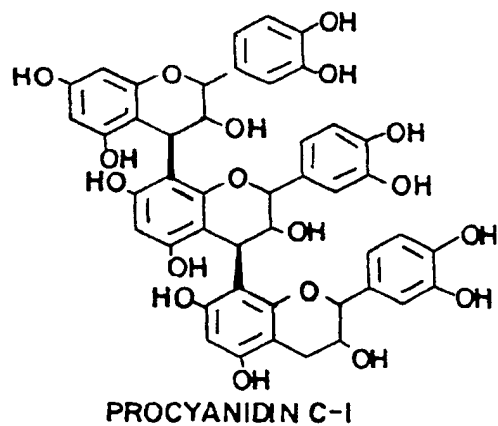
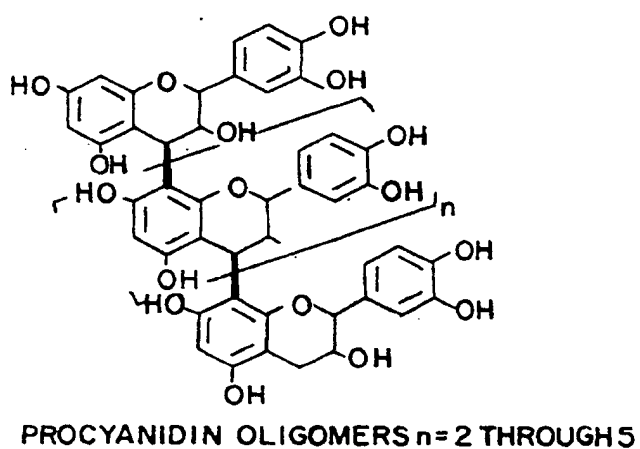
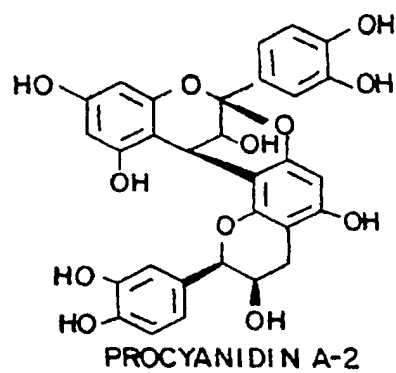
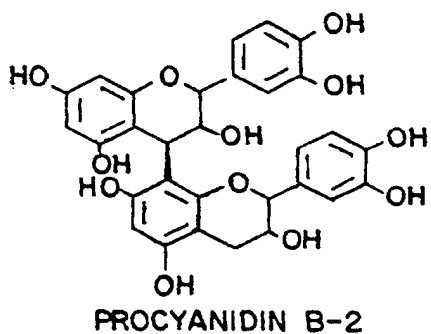
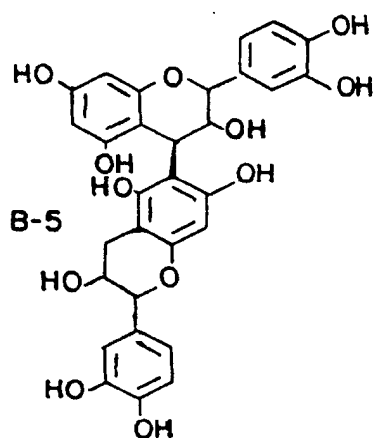


FIG. 3

FIG. 4A

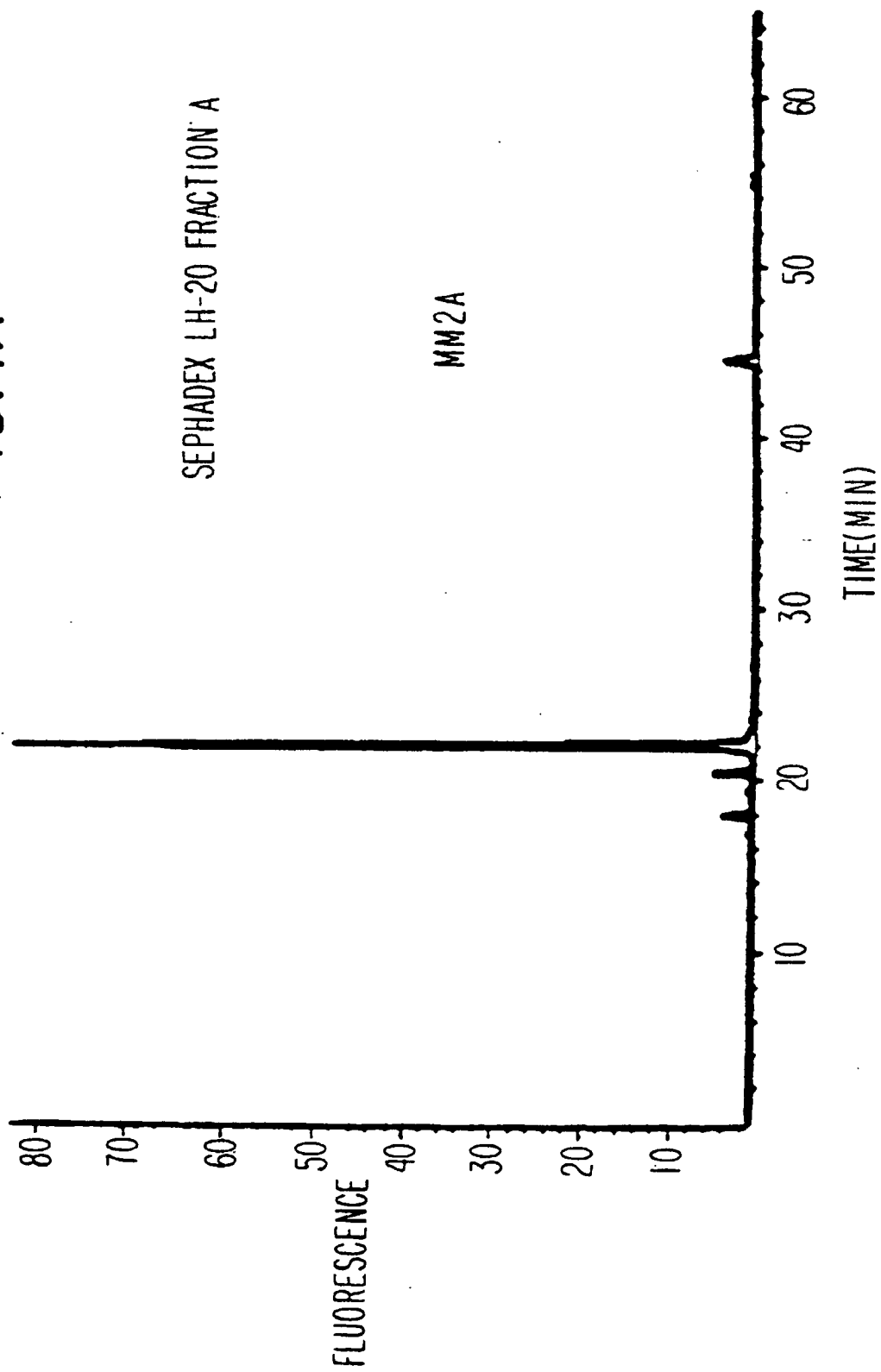


FIG. 4B

SEPHADEX LH-20 FRACTION B

MM2B

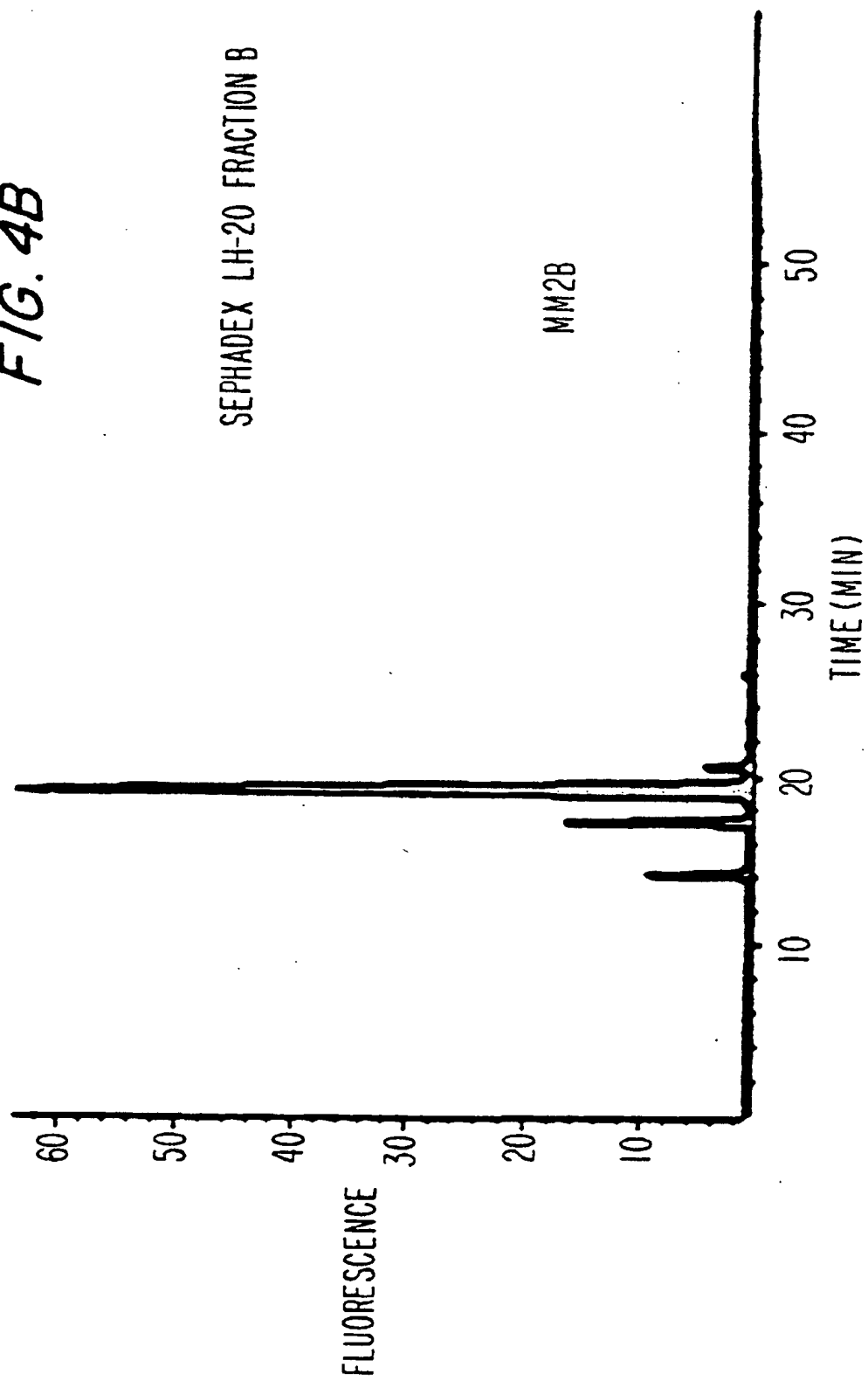


FIG. 4C

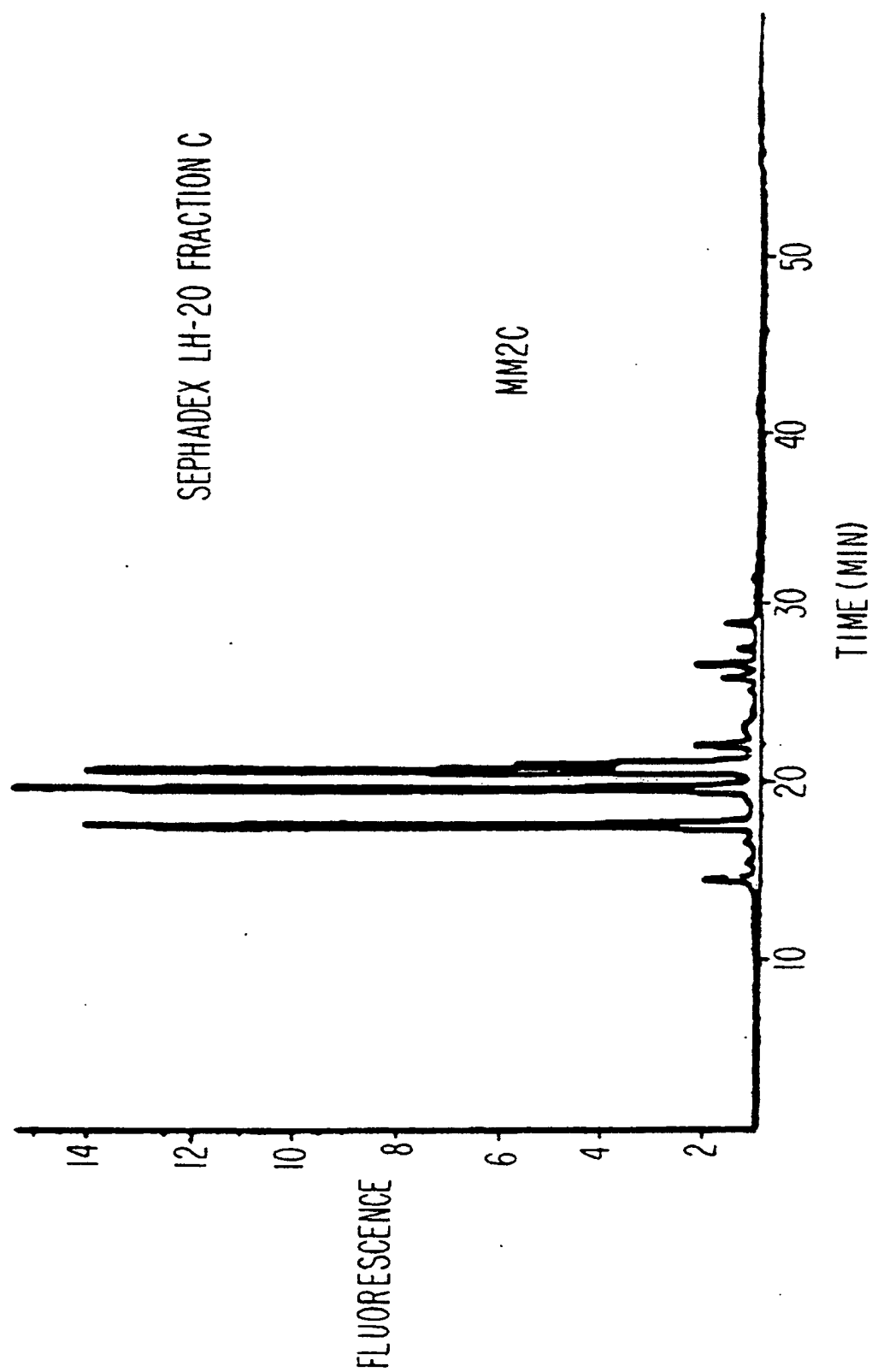


FIG. 4D

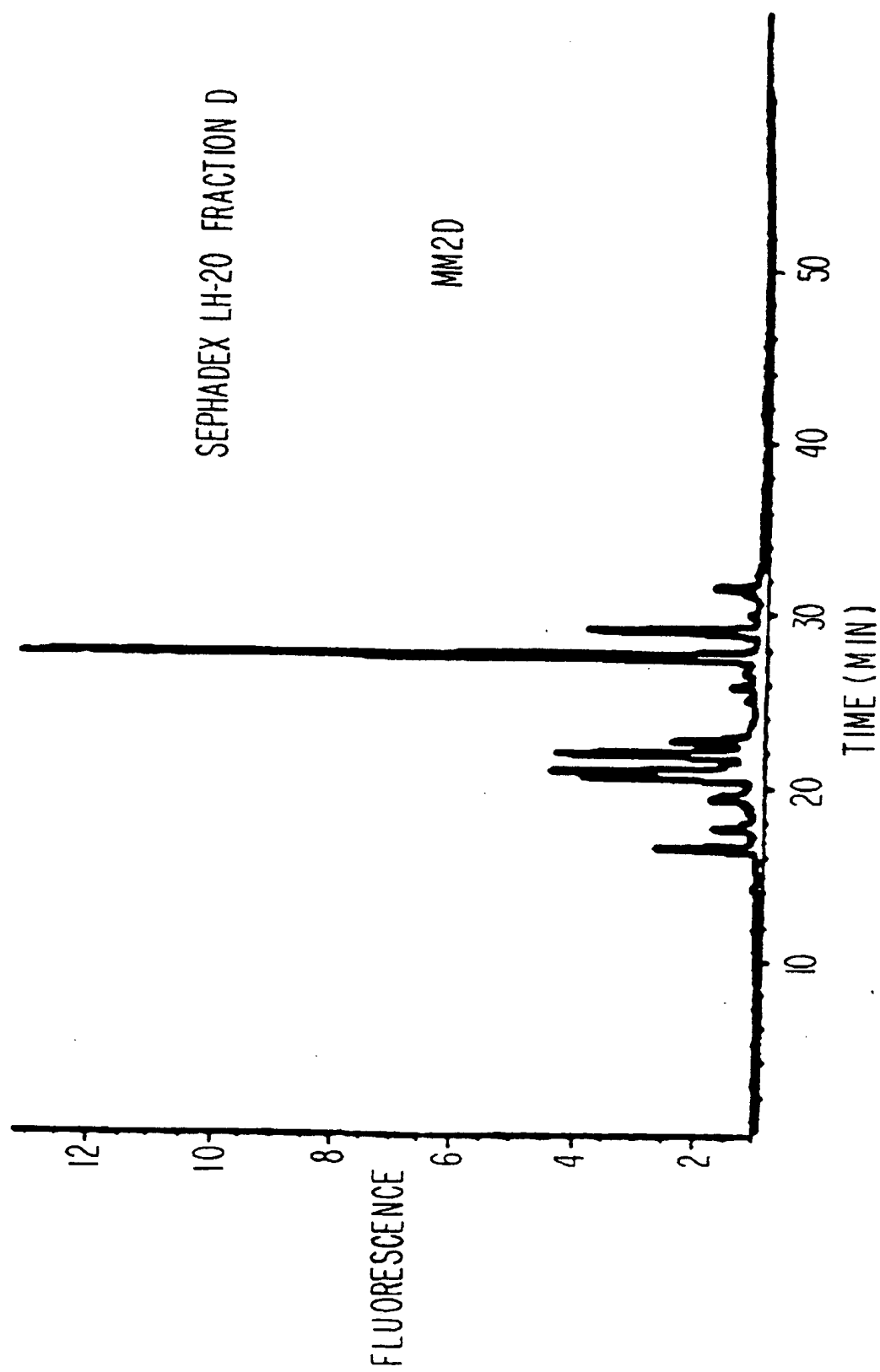


FIG. 4E

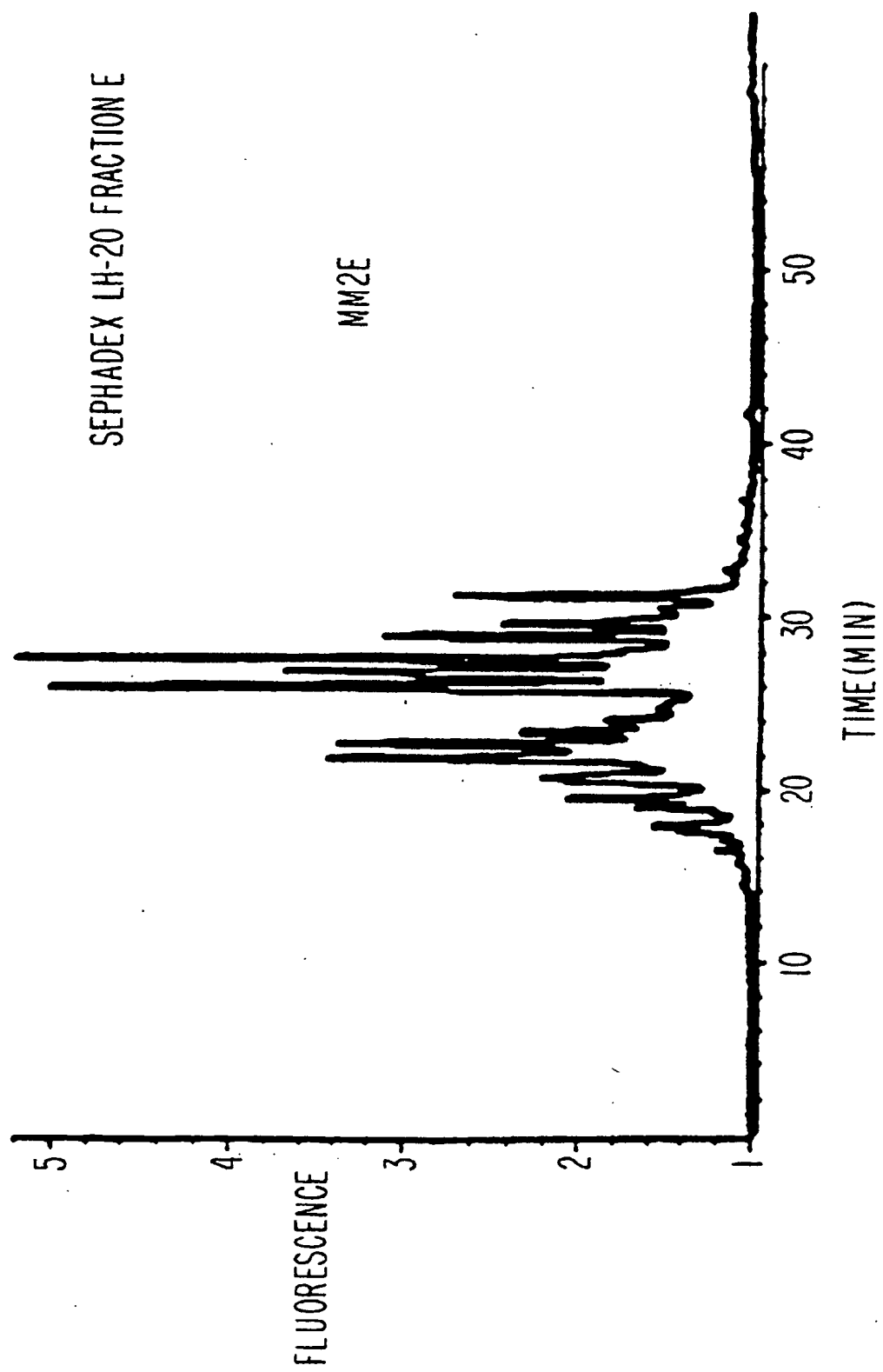


FIG. 5

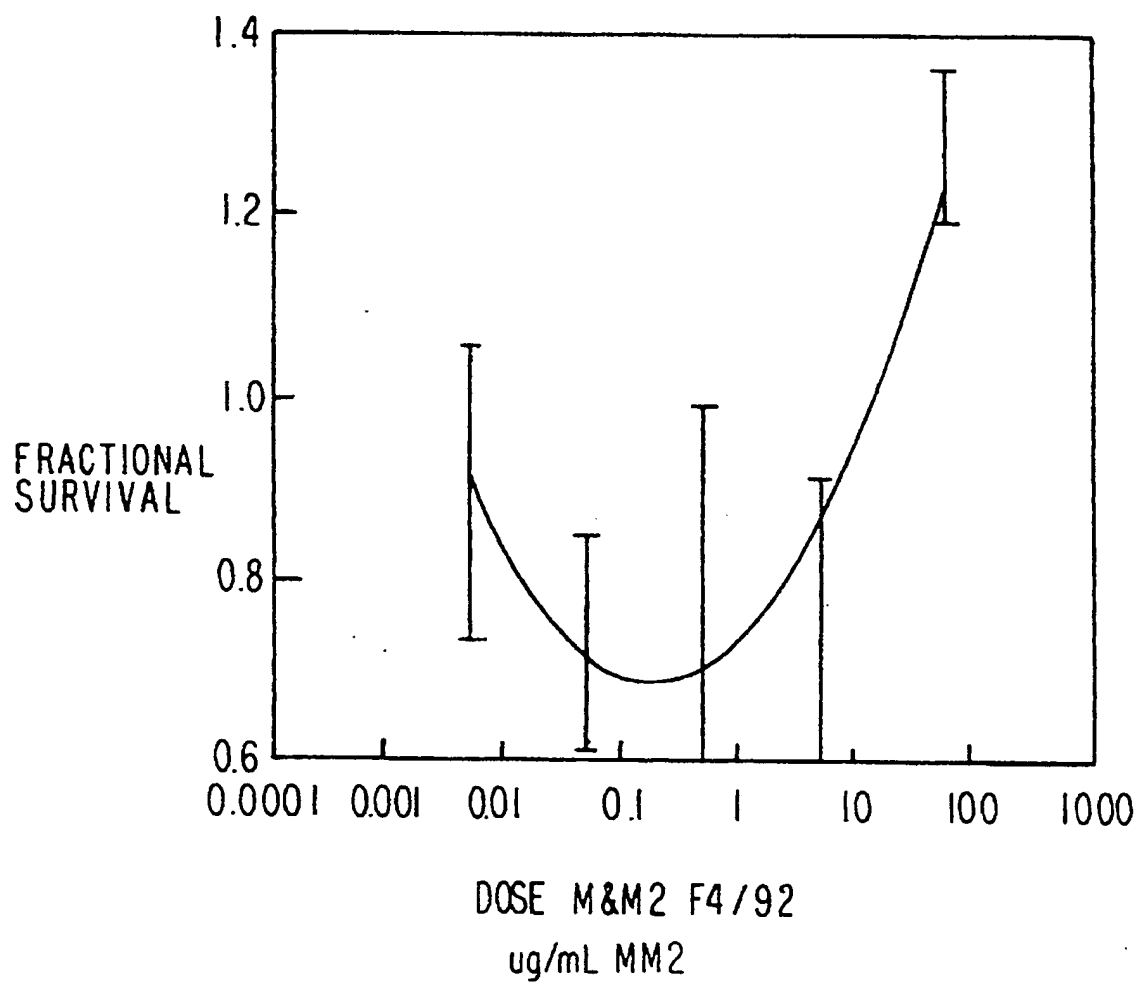


FIG. 6A

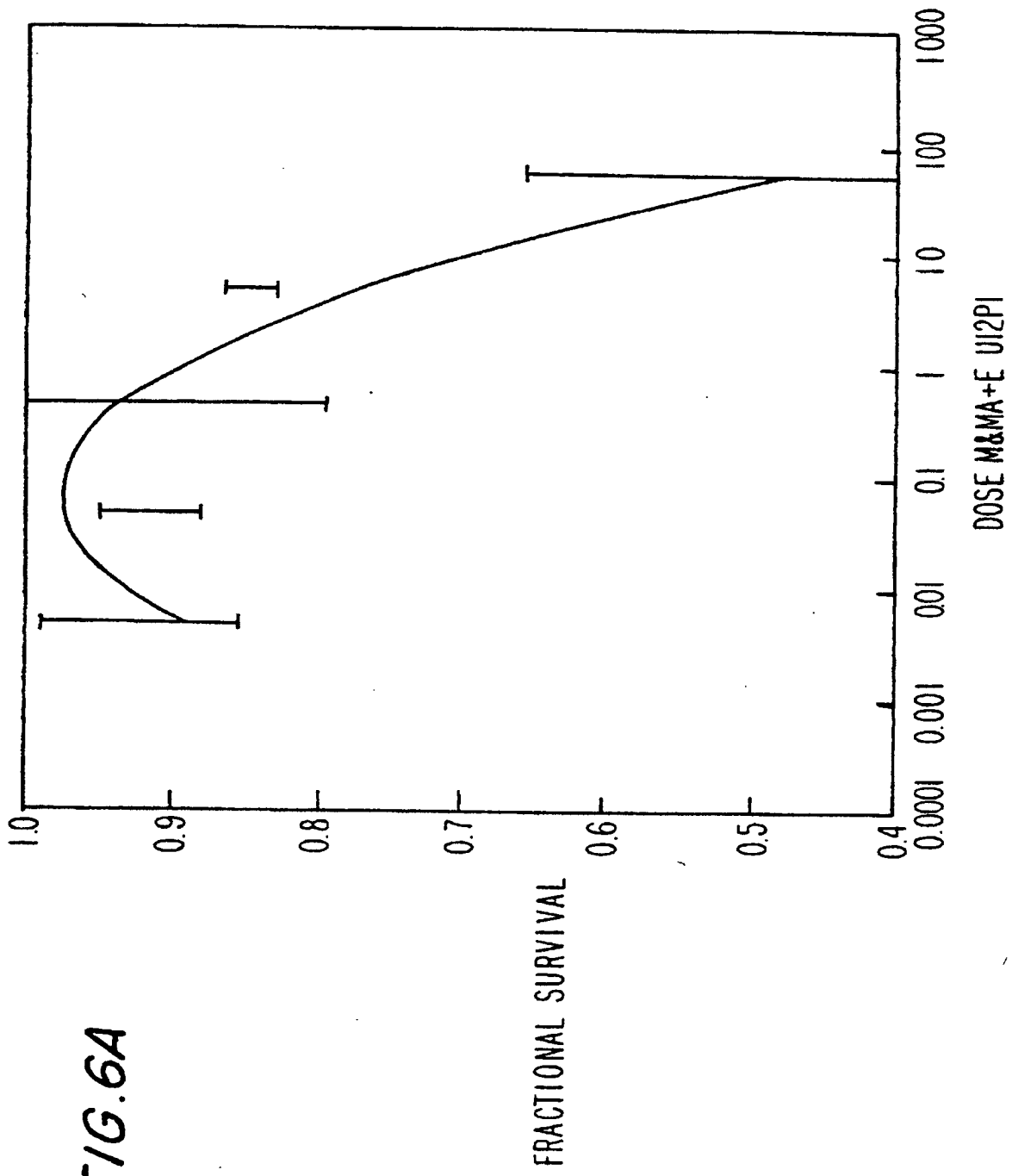


FIG.6B

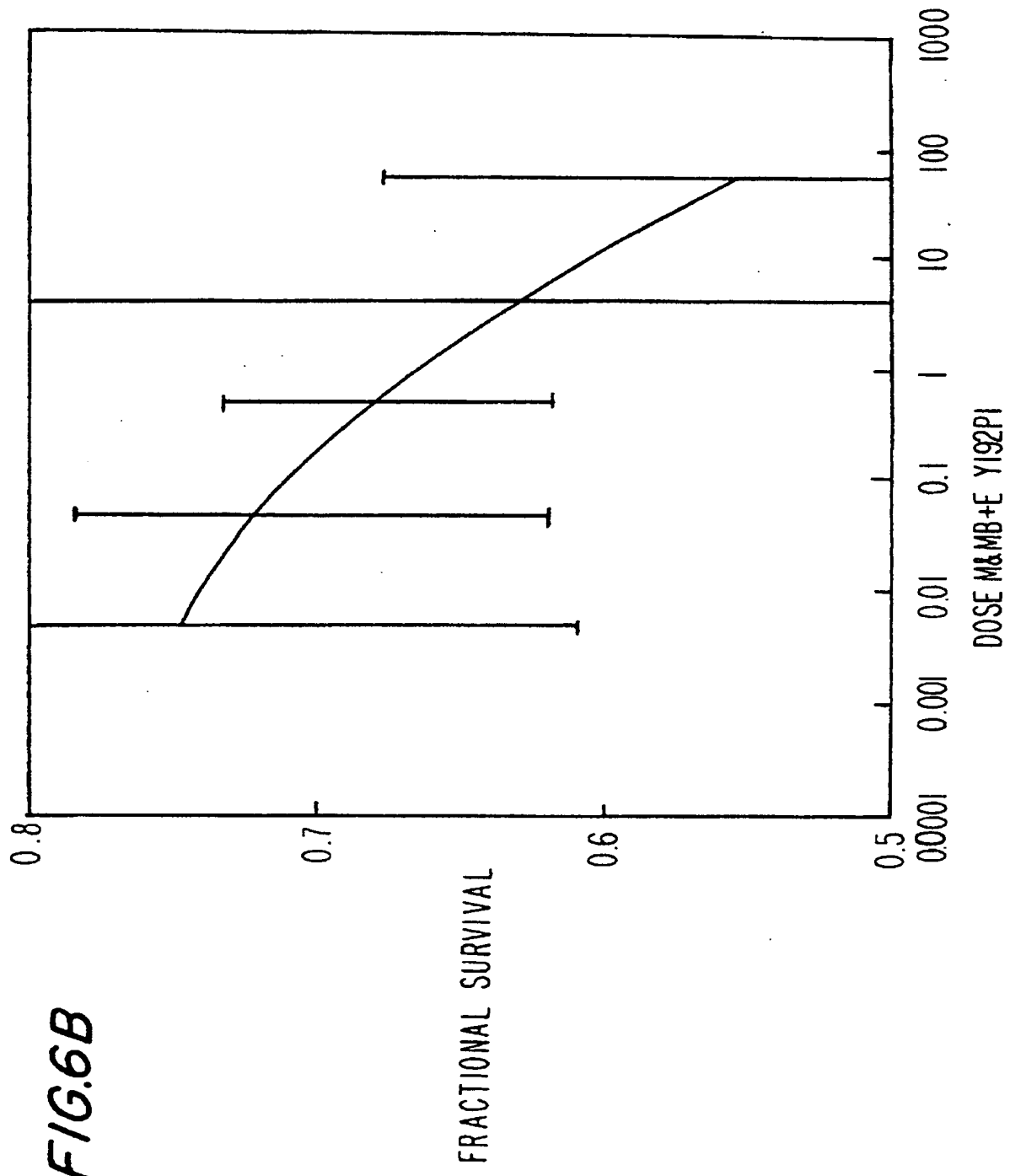


FIG. 6C

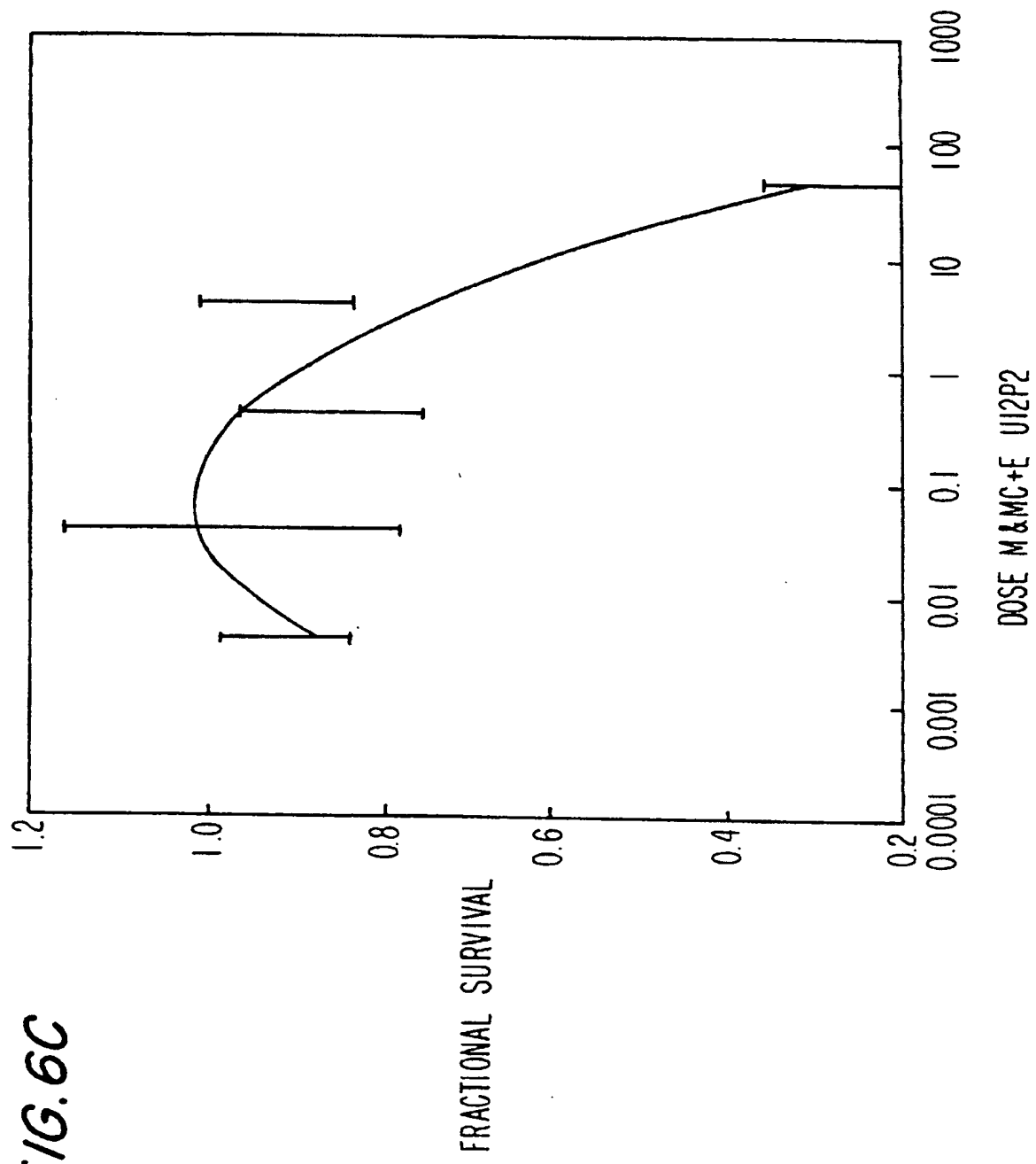


FIG.6D

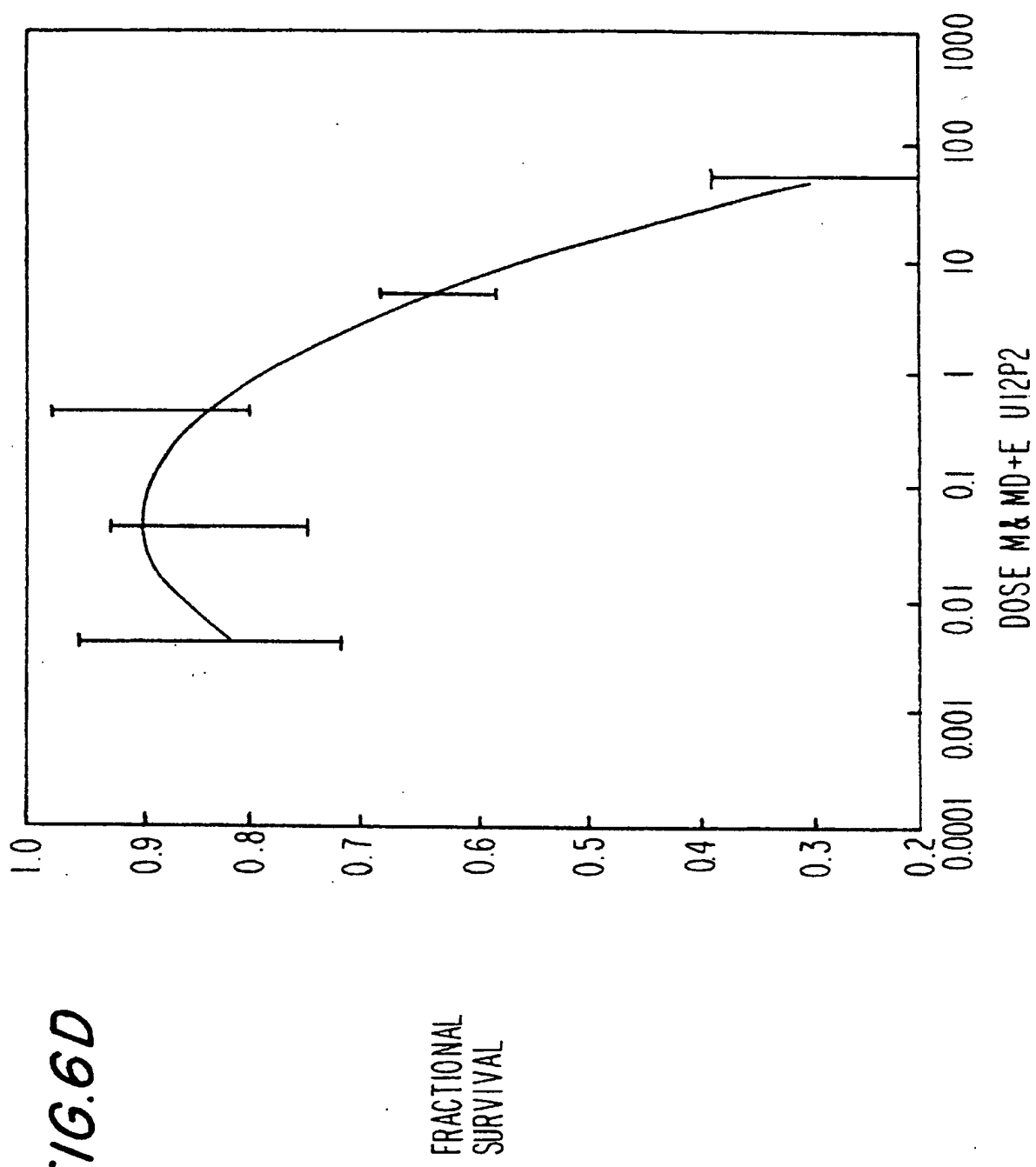


FIG. 7A

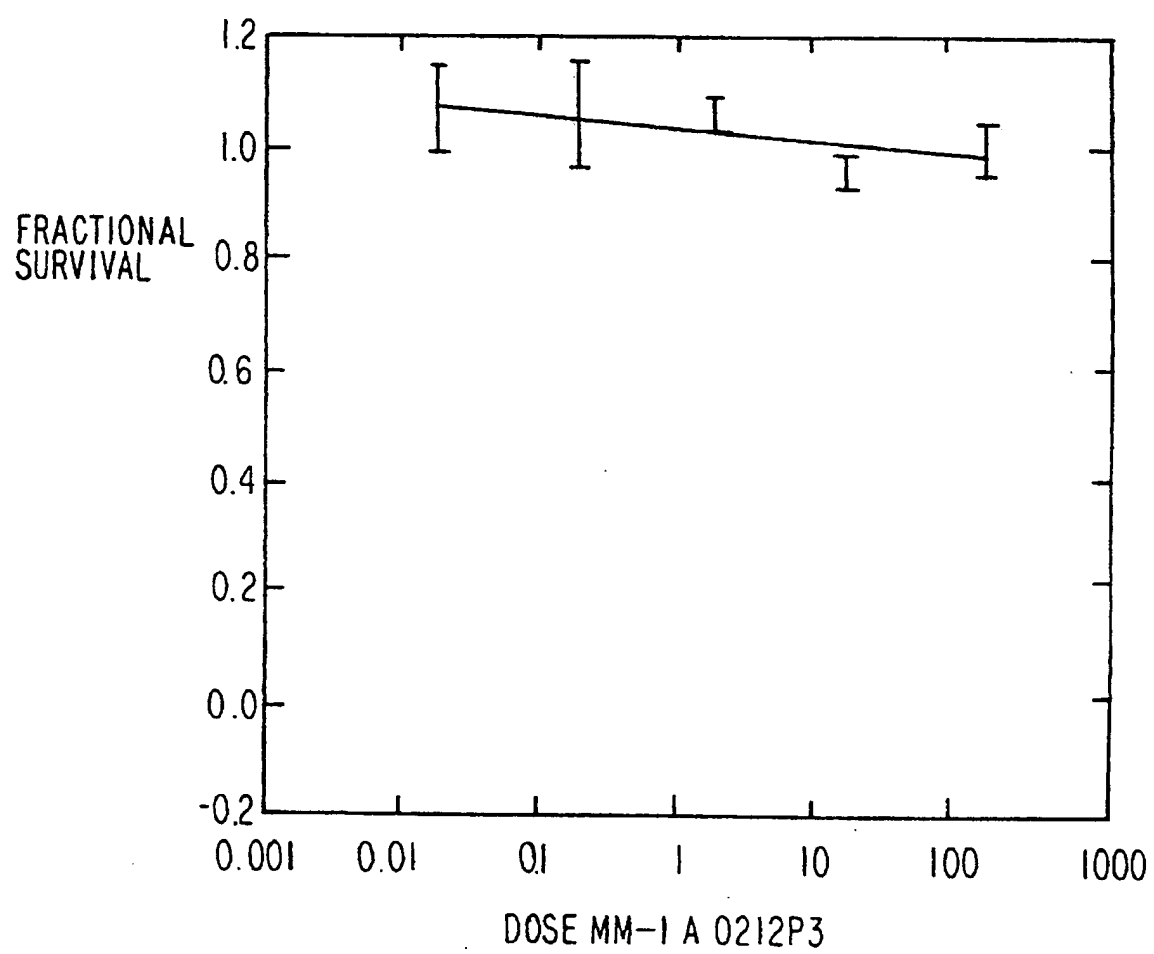


FIG. 7B

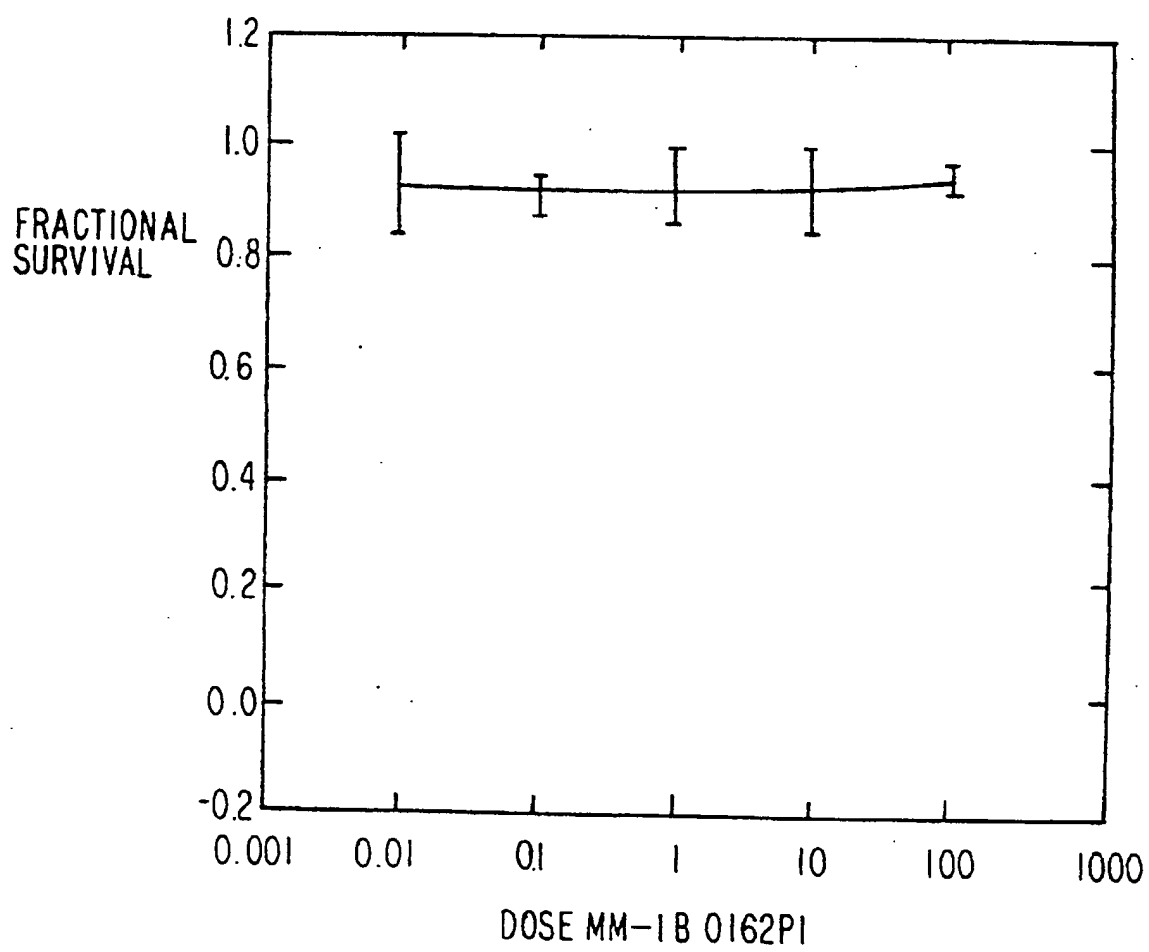


FIG. 7C

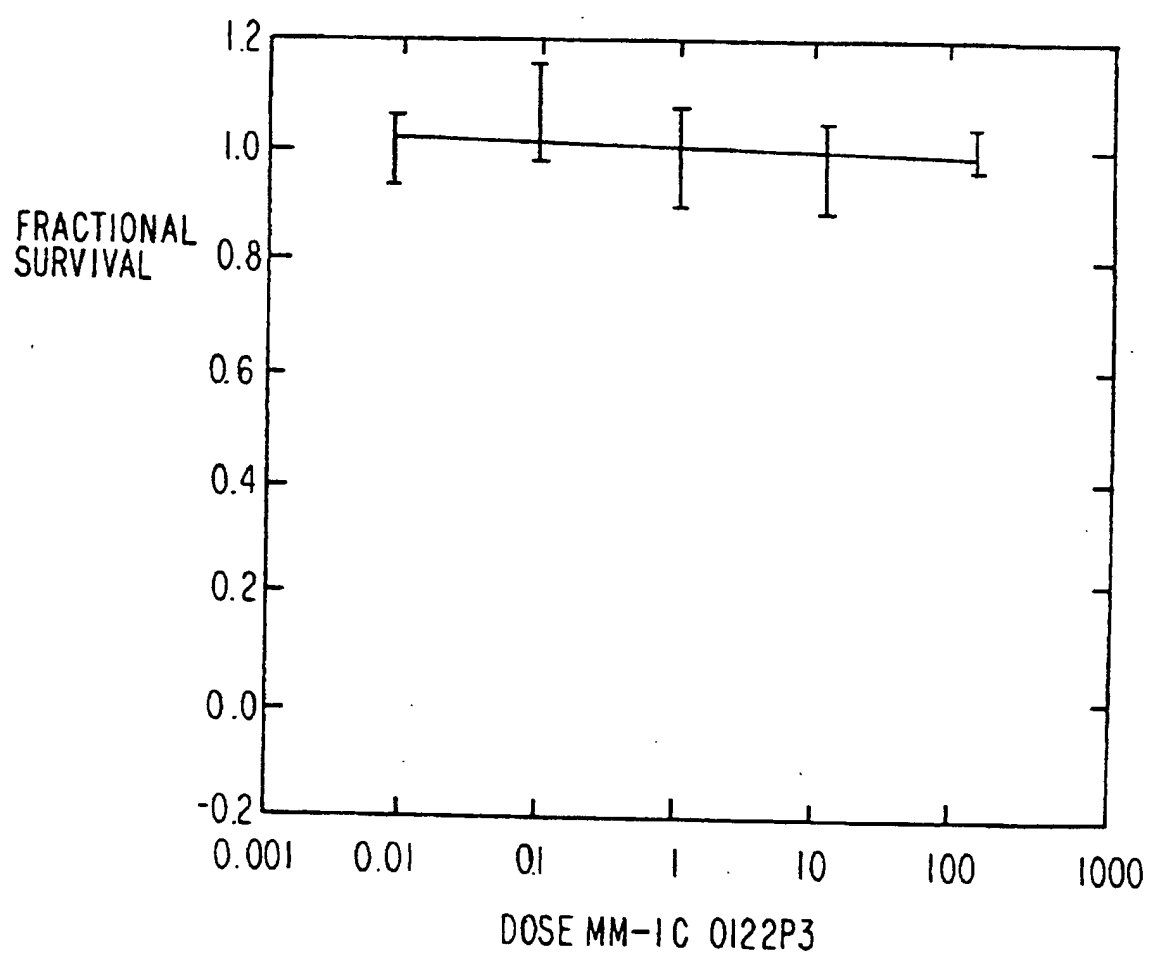


FIG. 7D

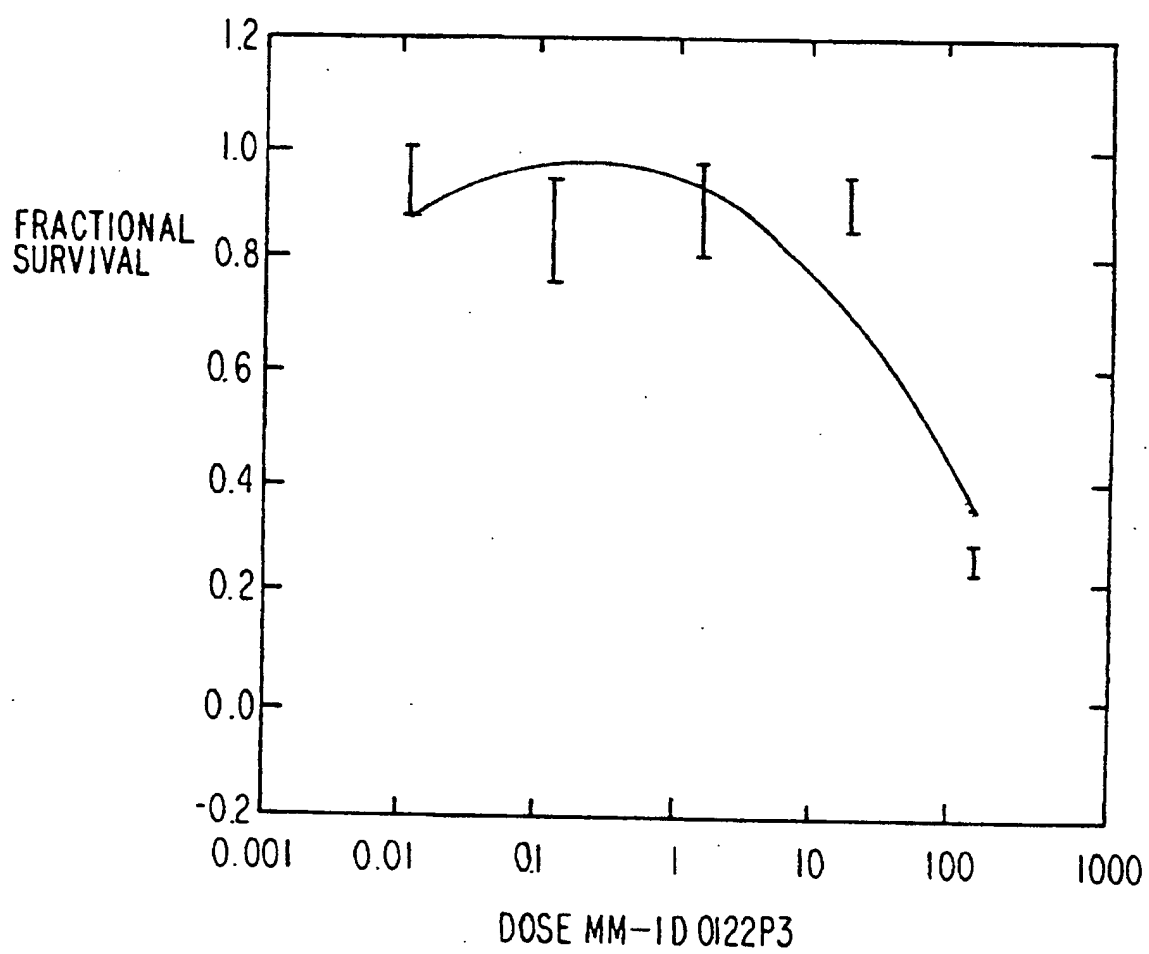


FIG. 7E

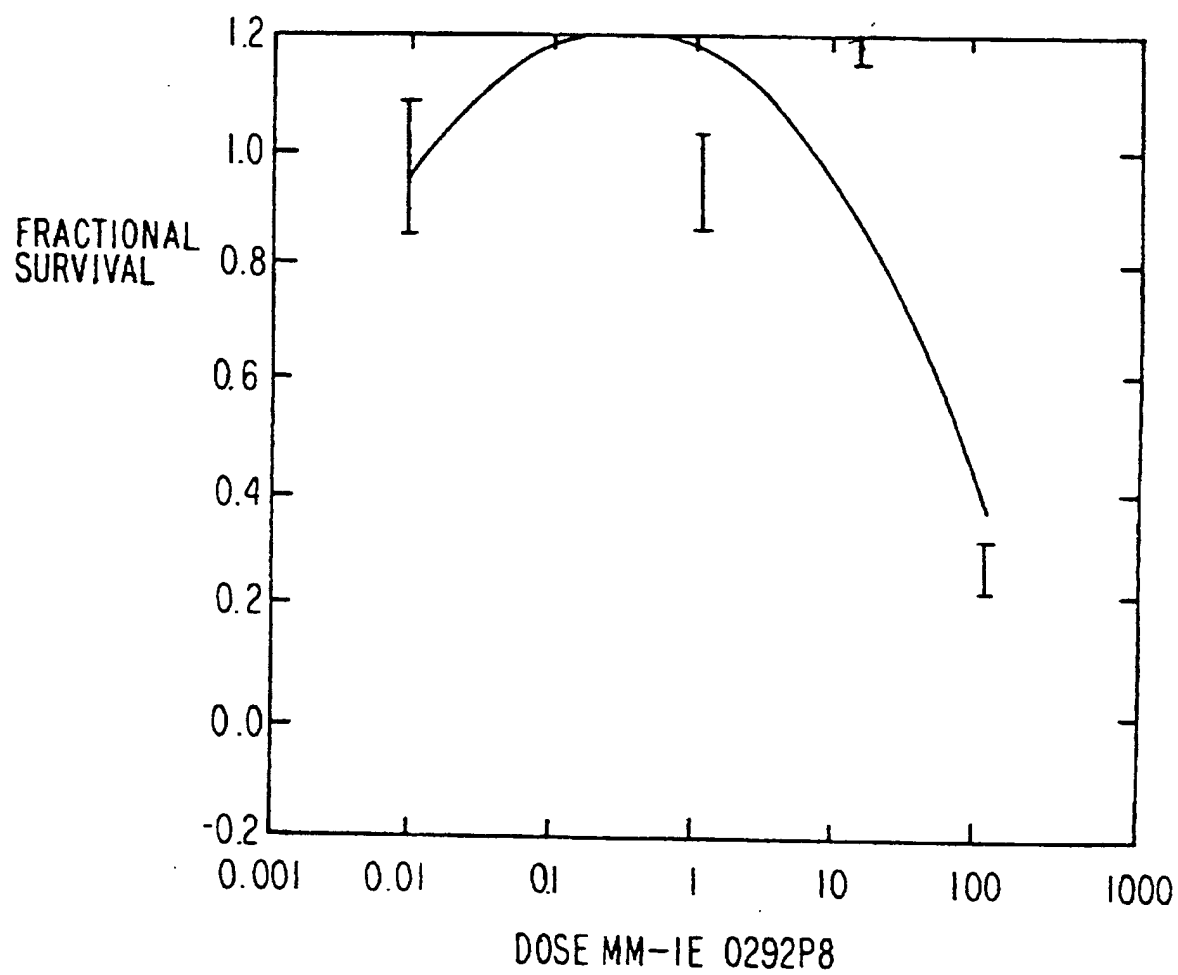


FIG. 7F

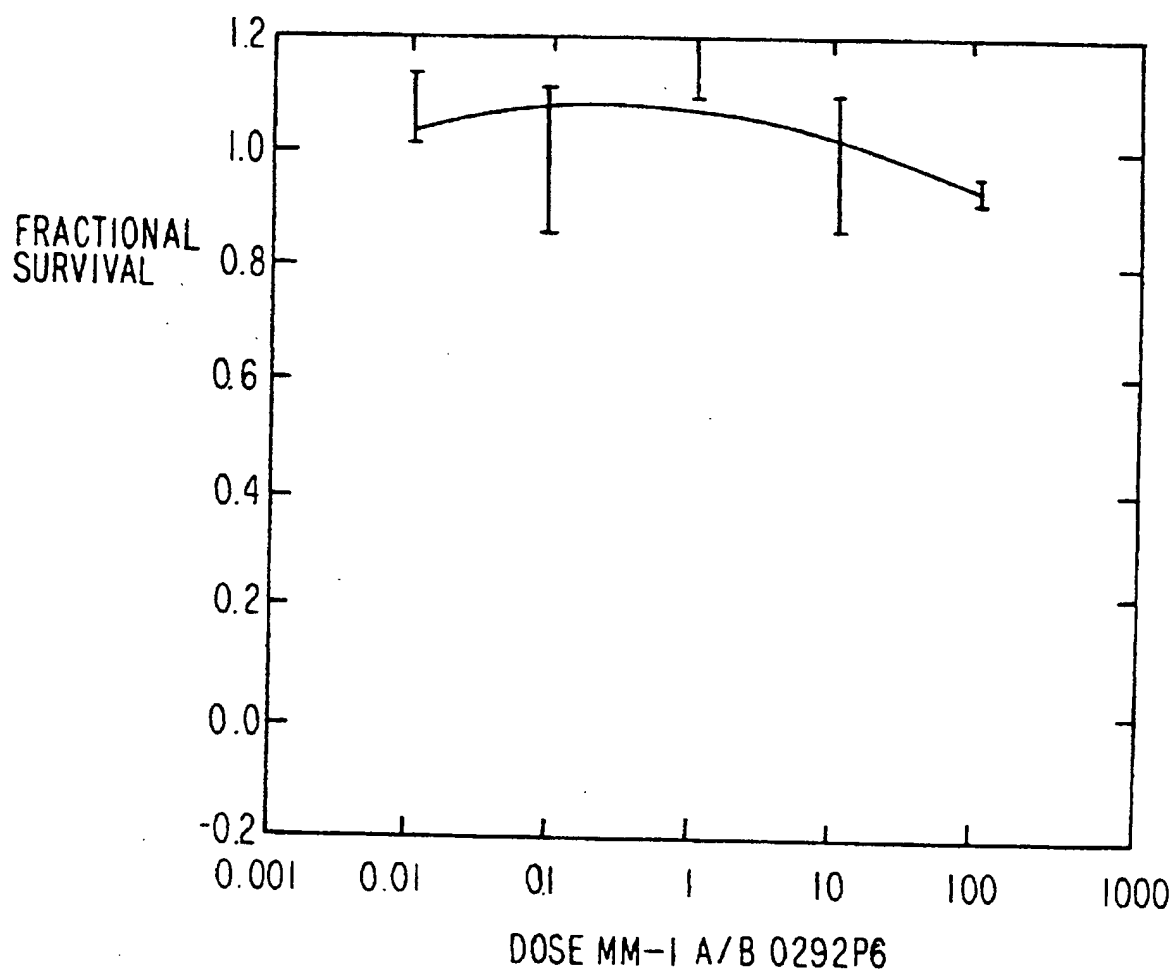


FIG. 7G

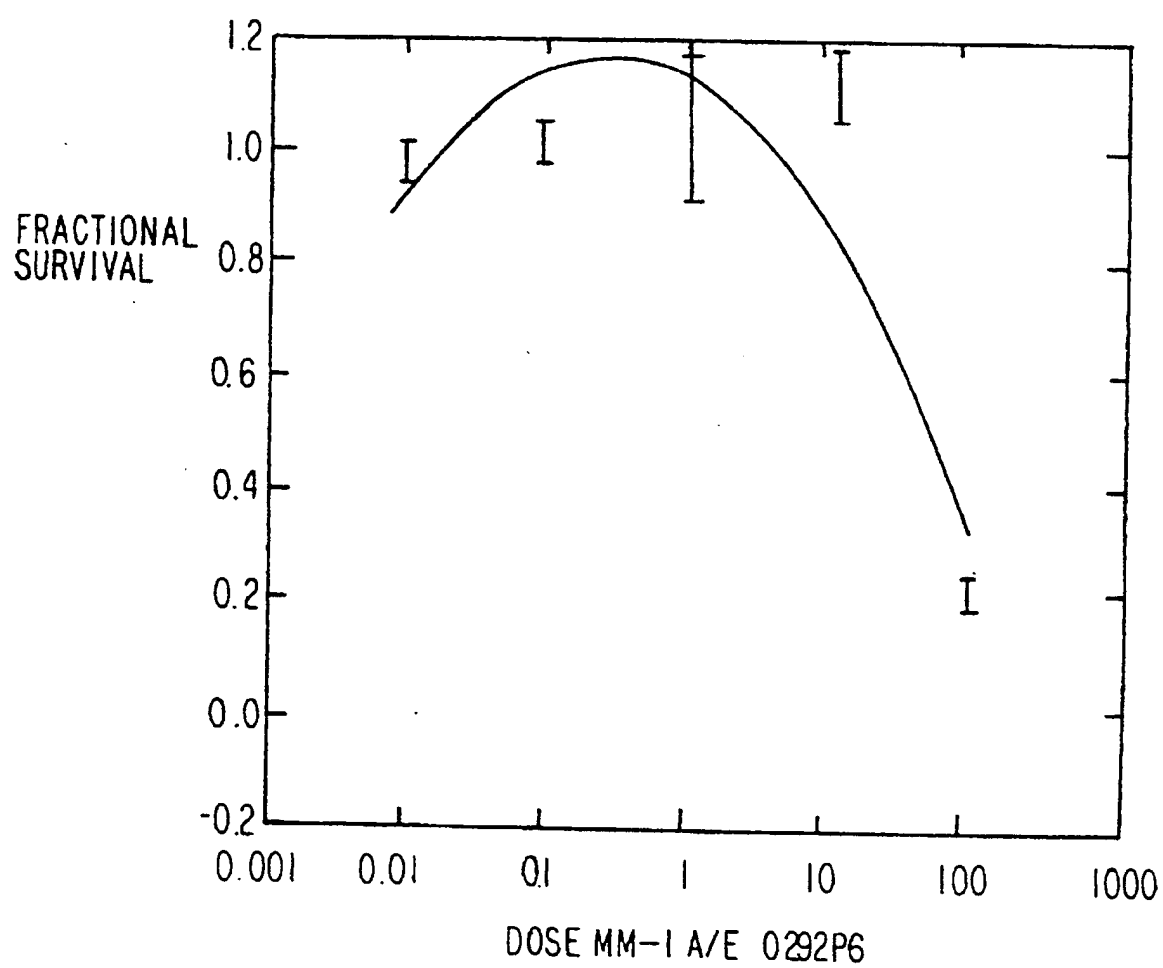


FIG. 7H

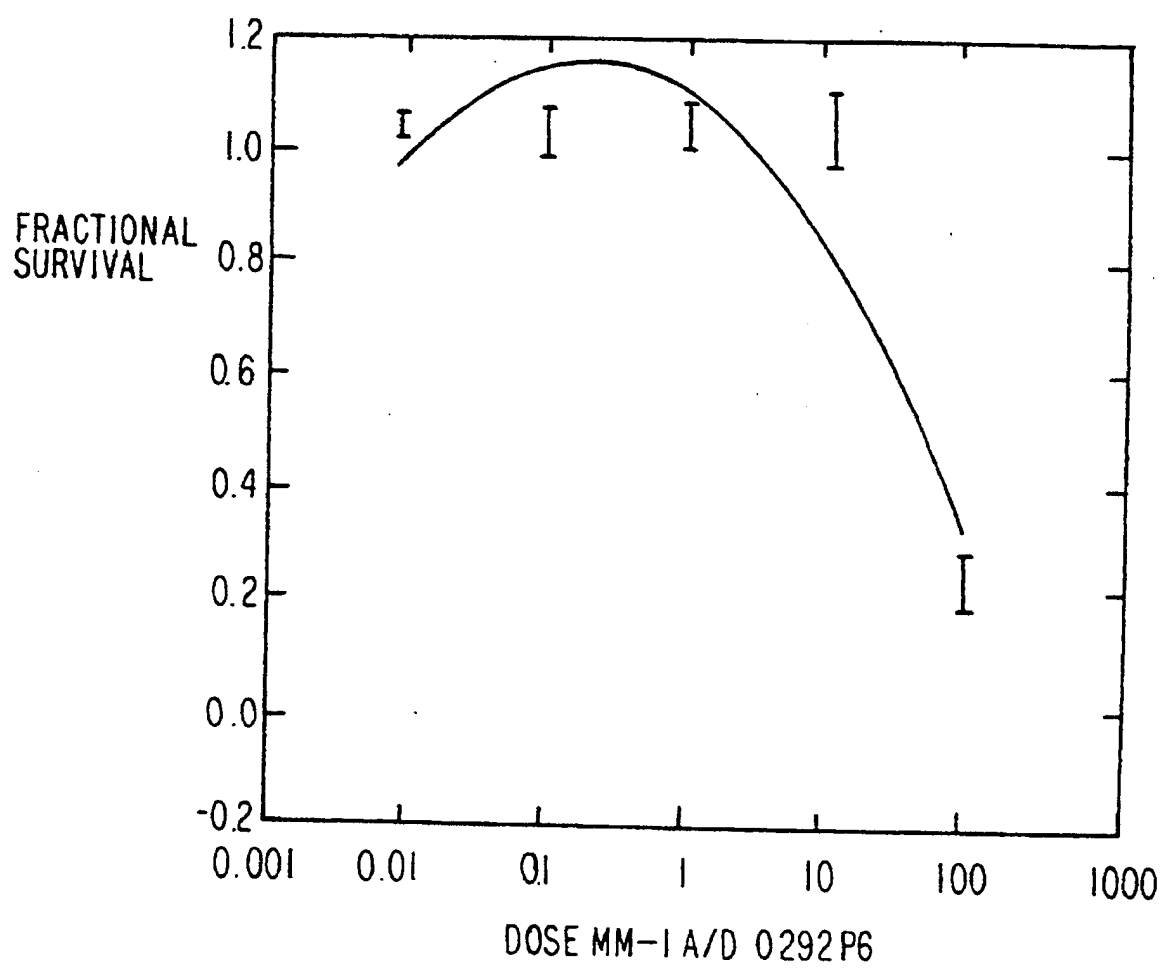


FIG.8A

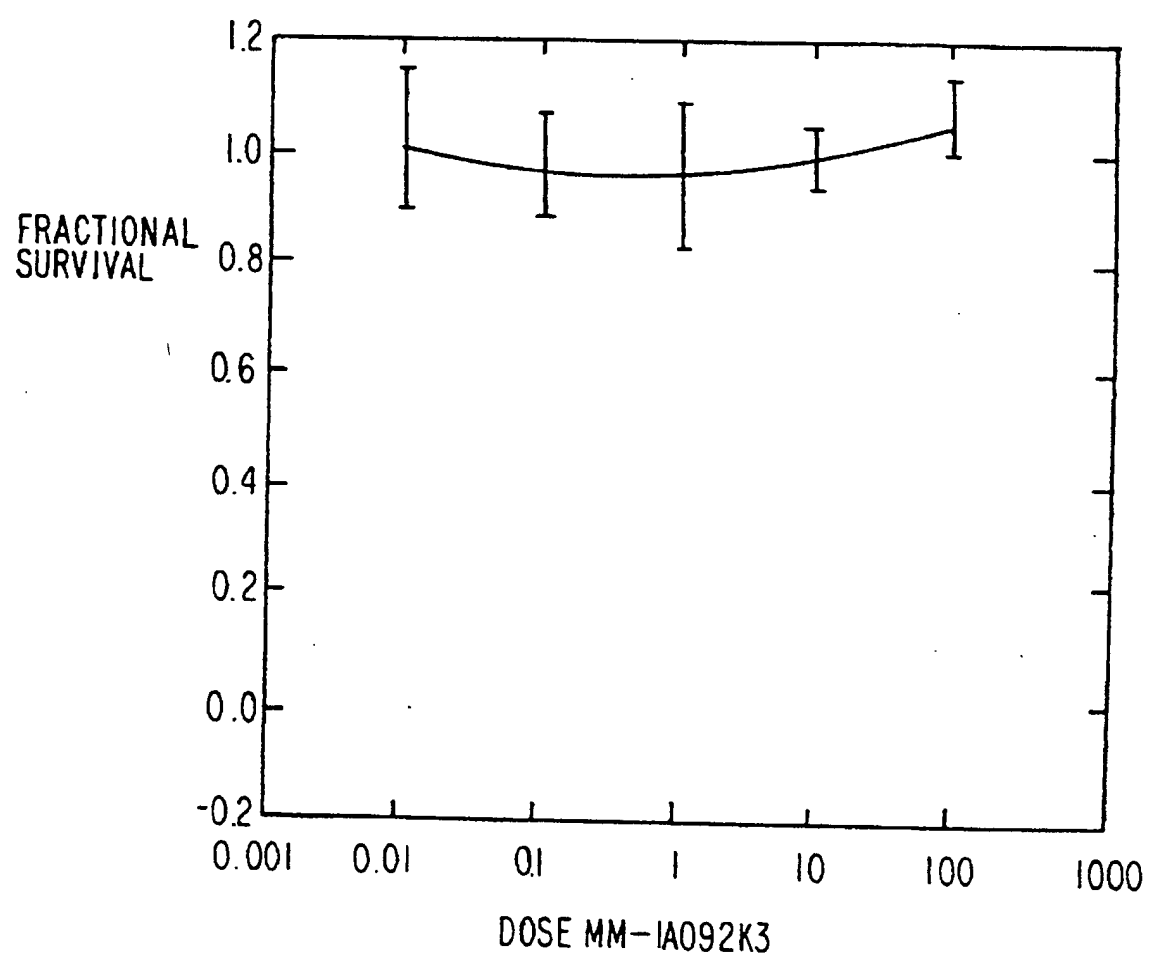


FIG. 8B

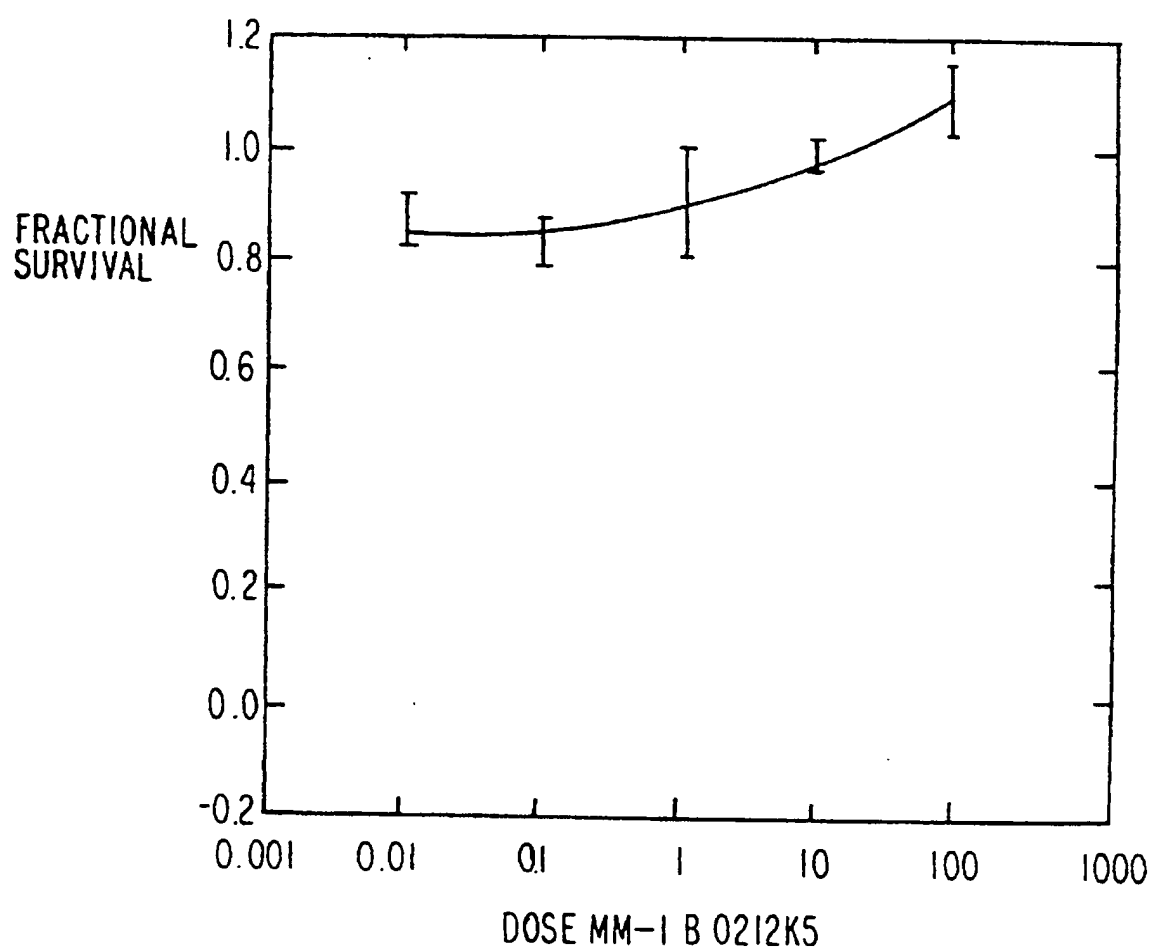


FIG.8C

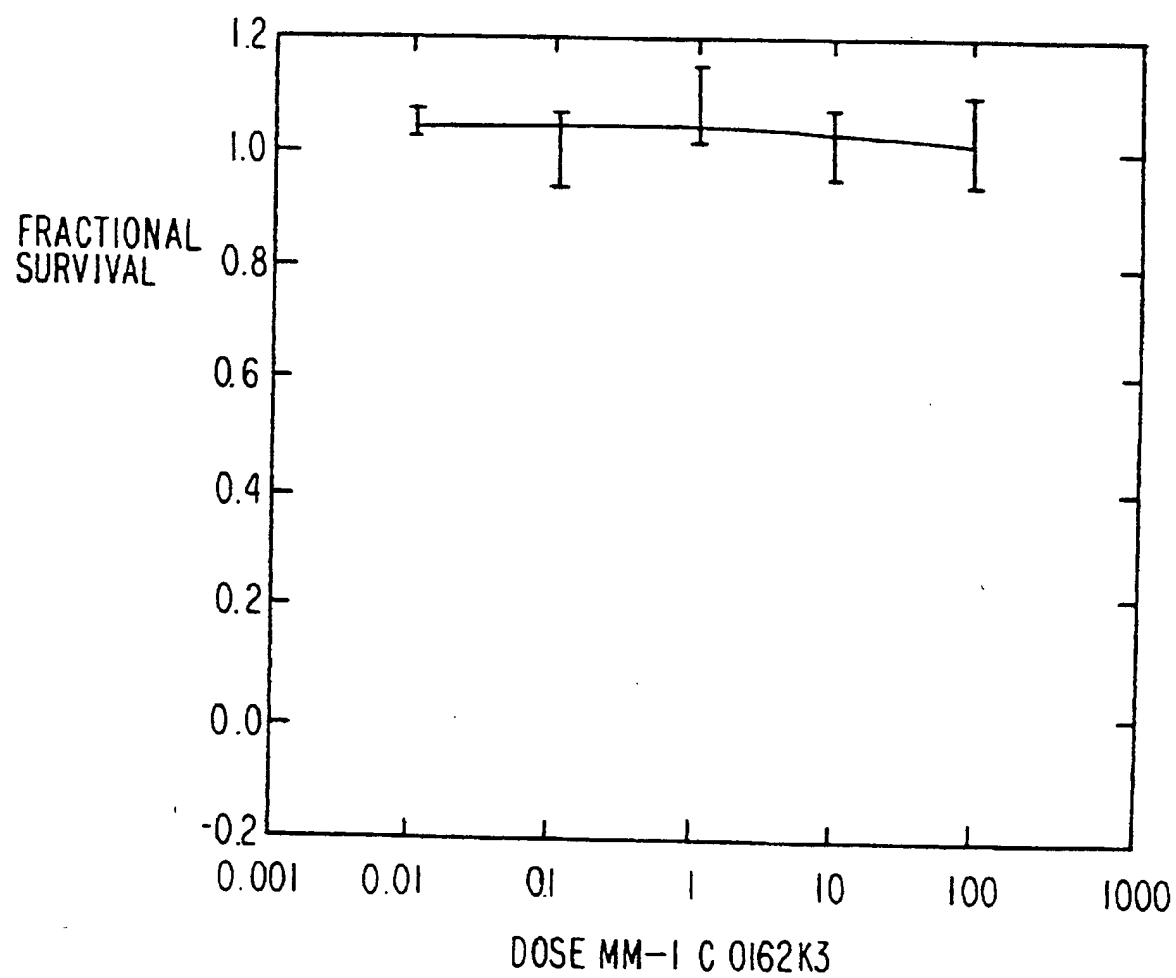


FIG. 8D

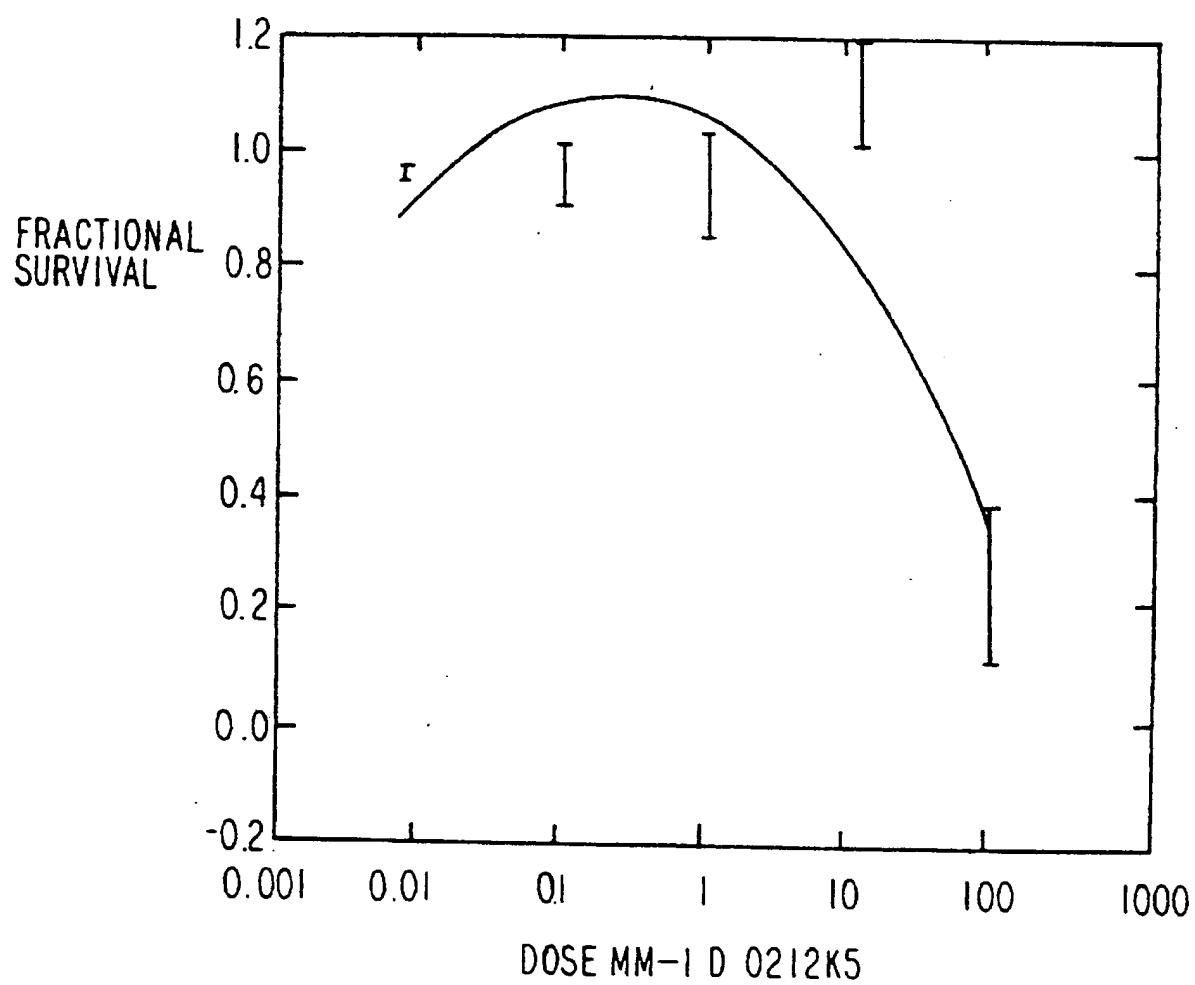


FIG. 8E

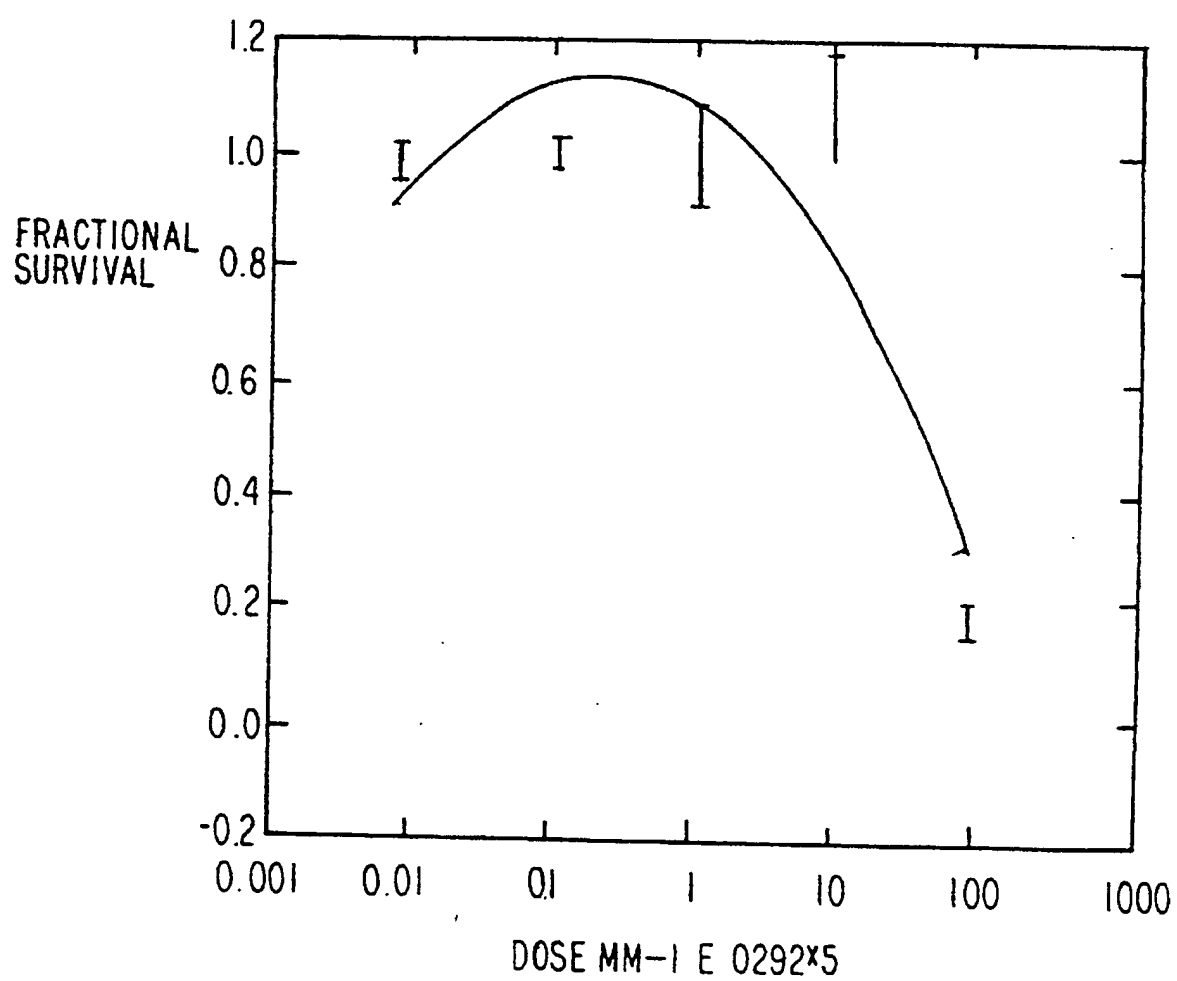


FIG. 8F

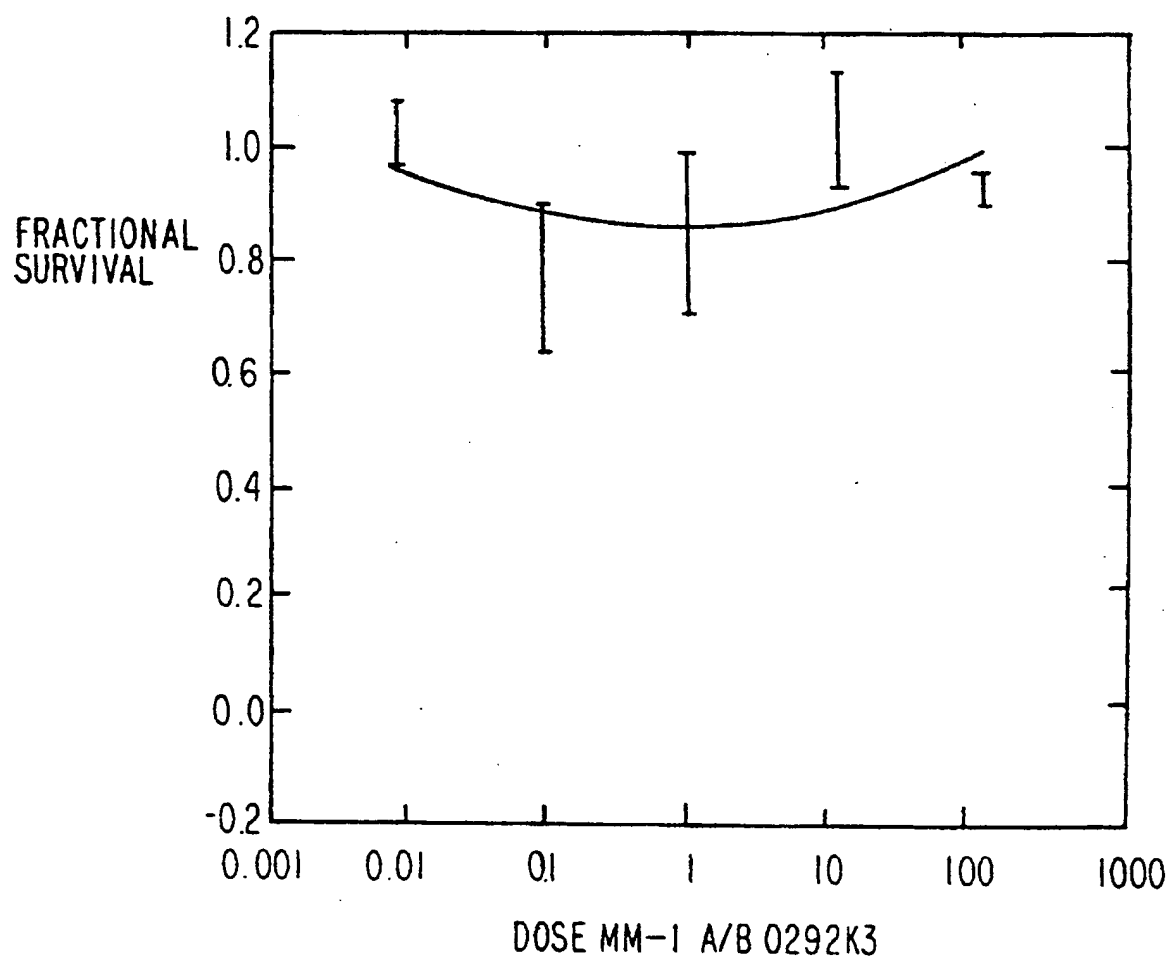


FIG. 8G

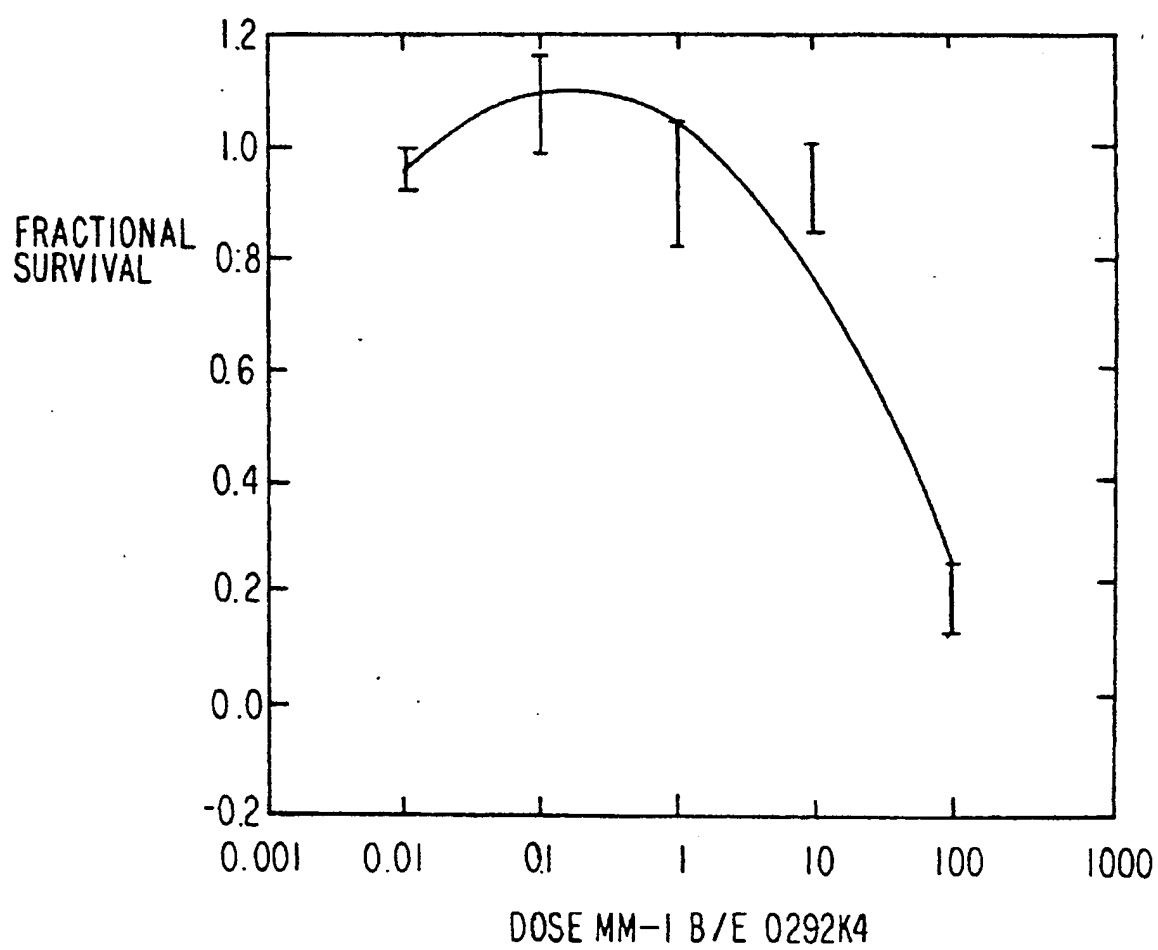


FIG. 8H

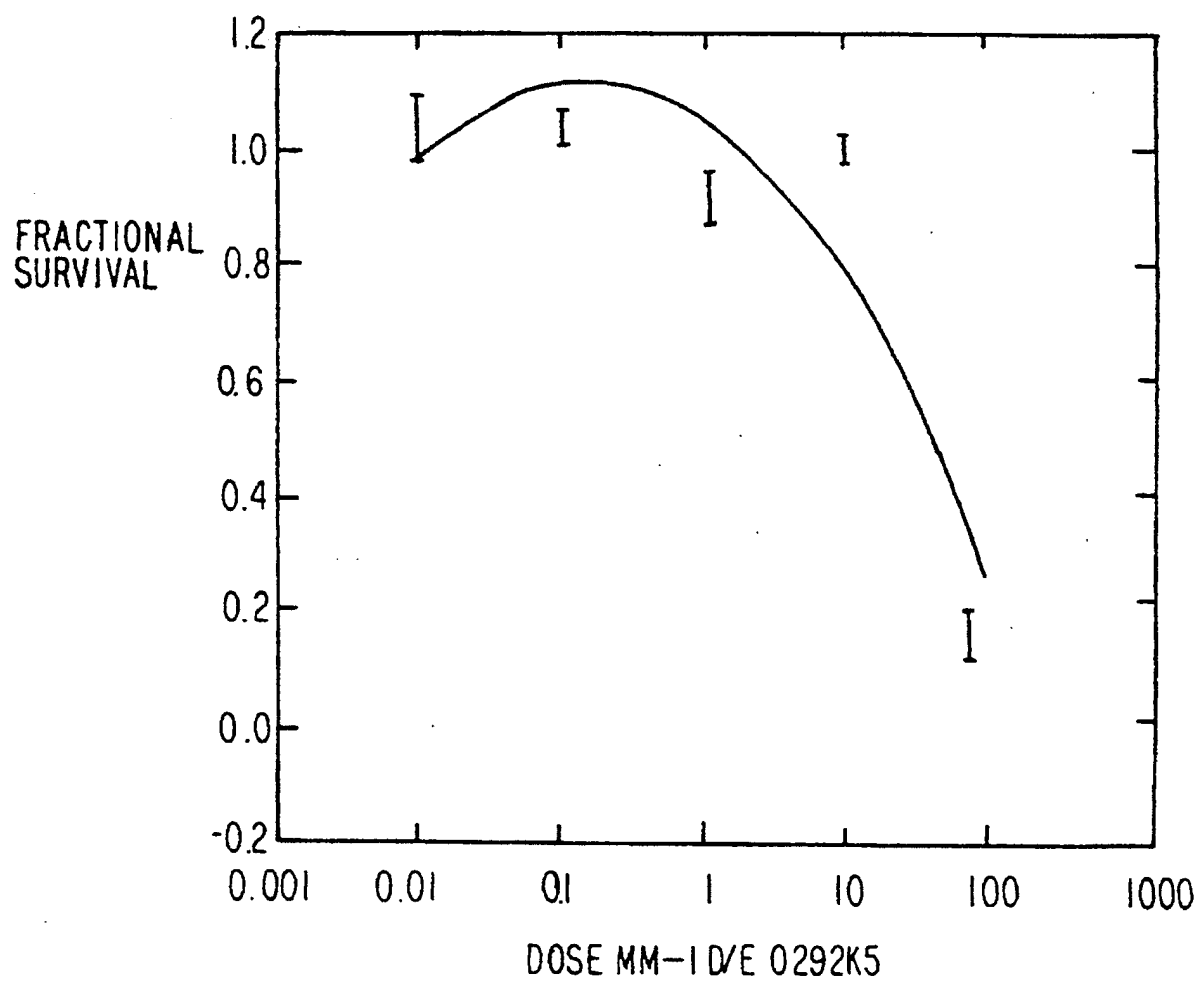


FIG. 9A

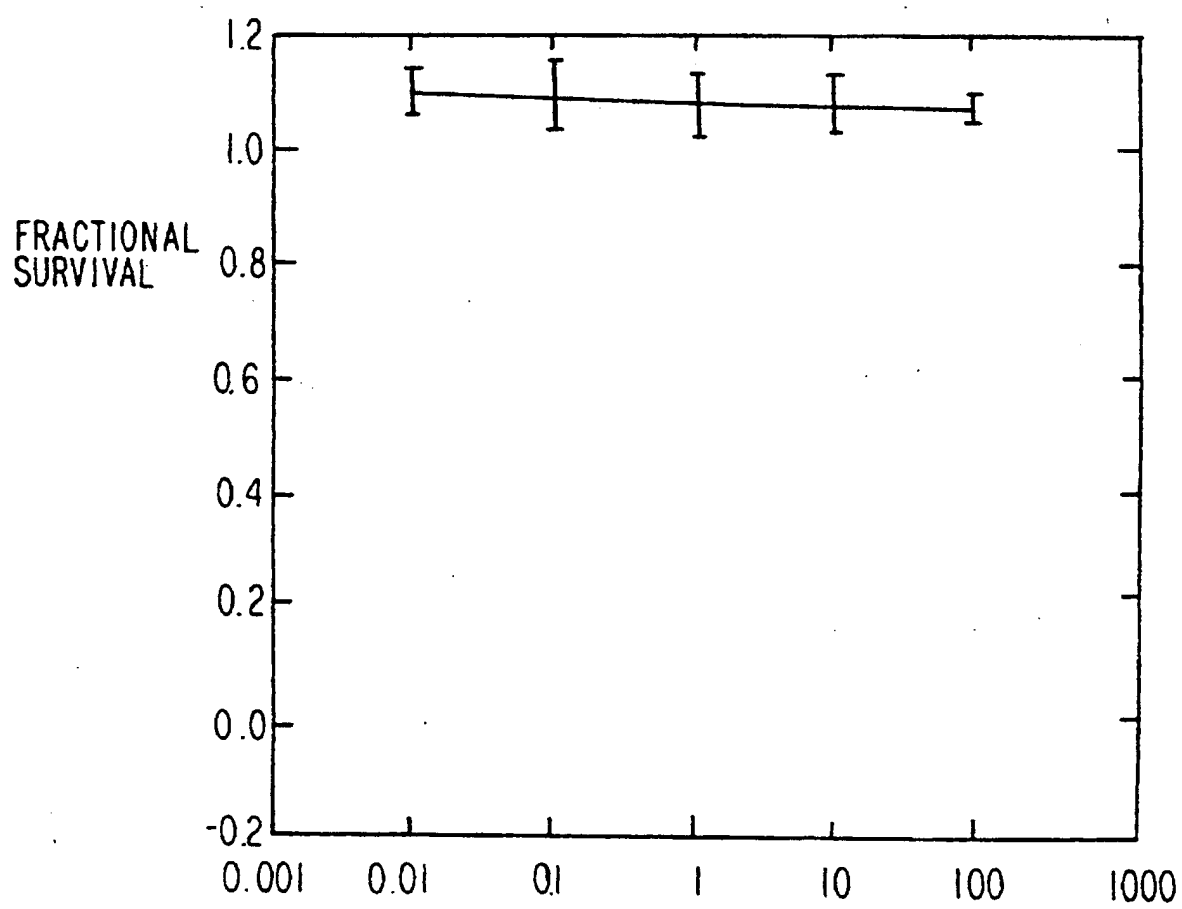


FIG. 9B

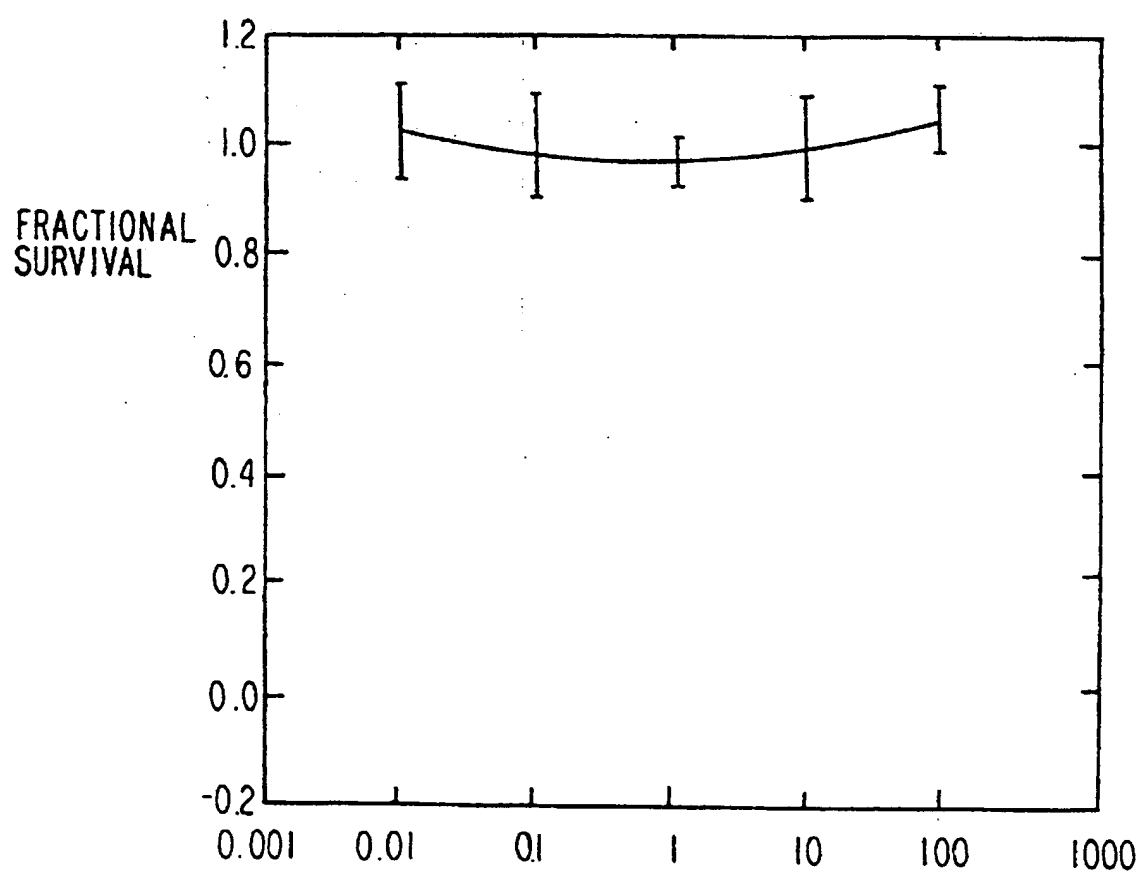


FIG. 9C

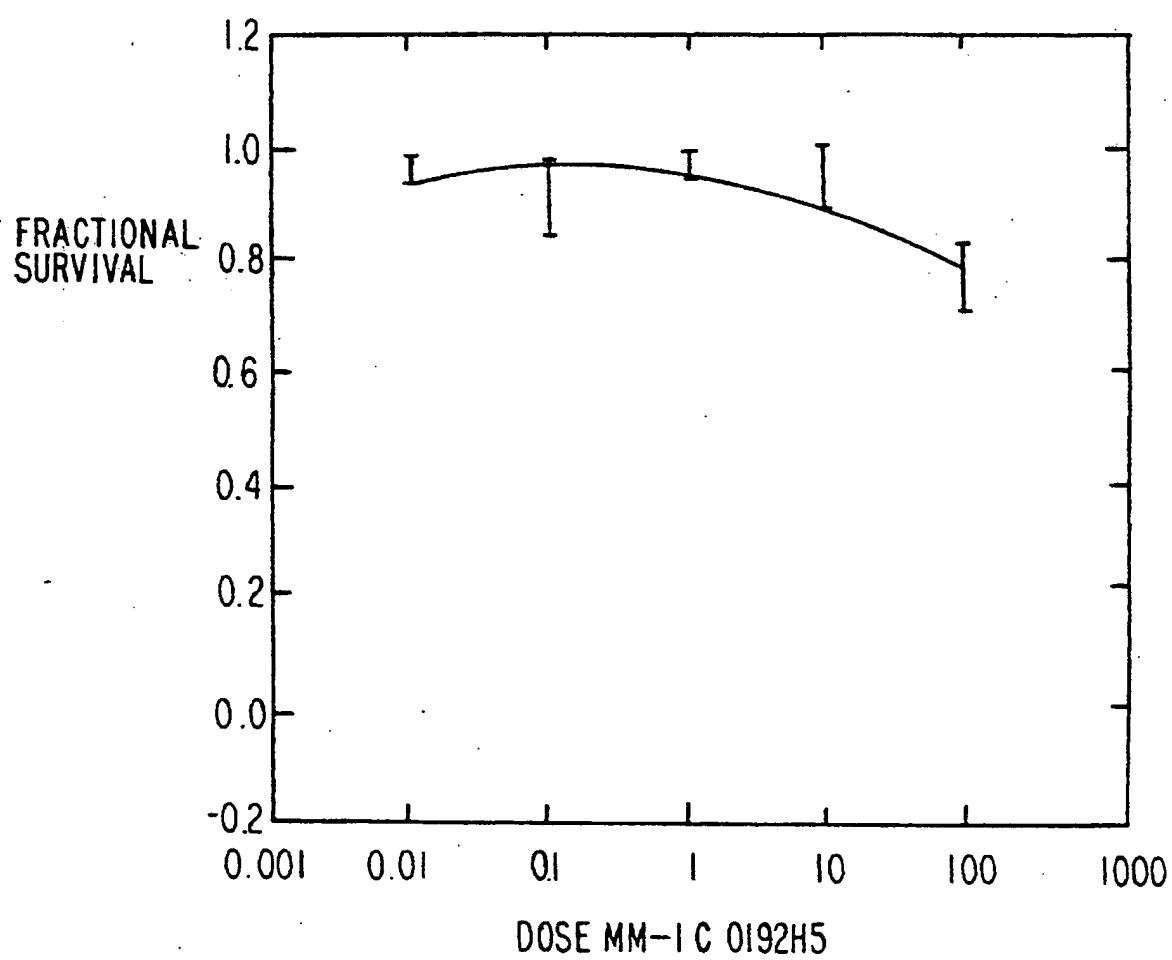


FIG. 9D

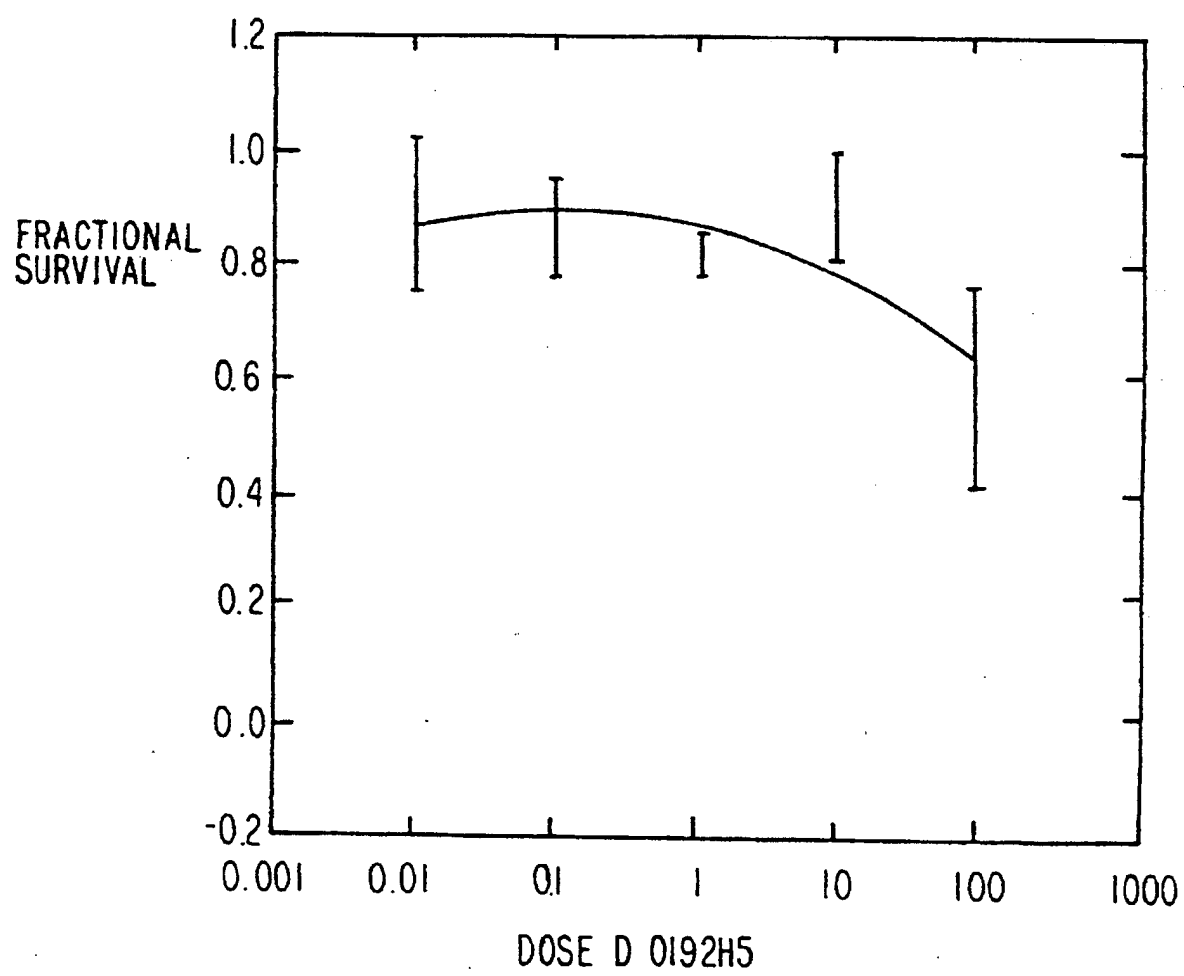


FIG. 9E

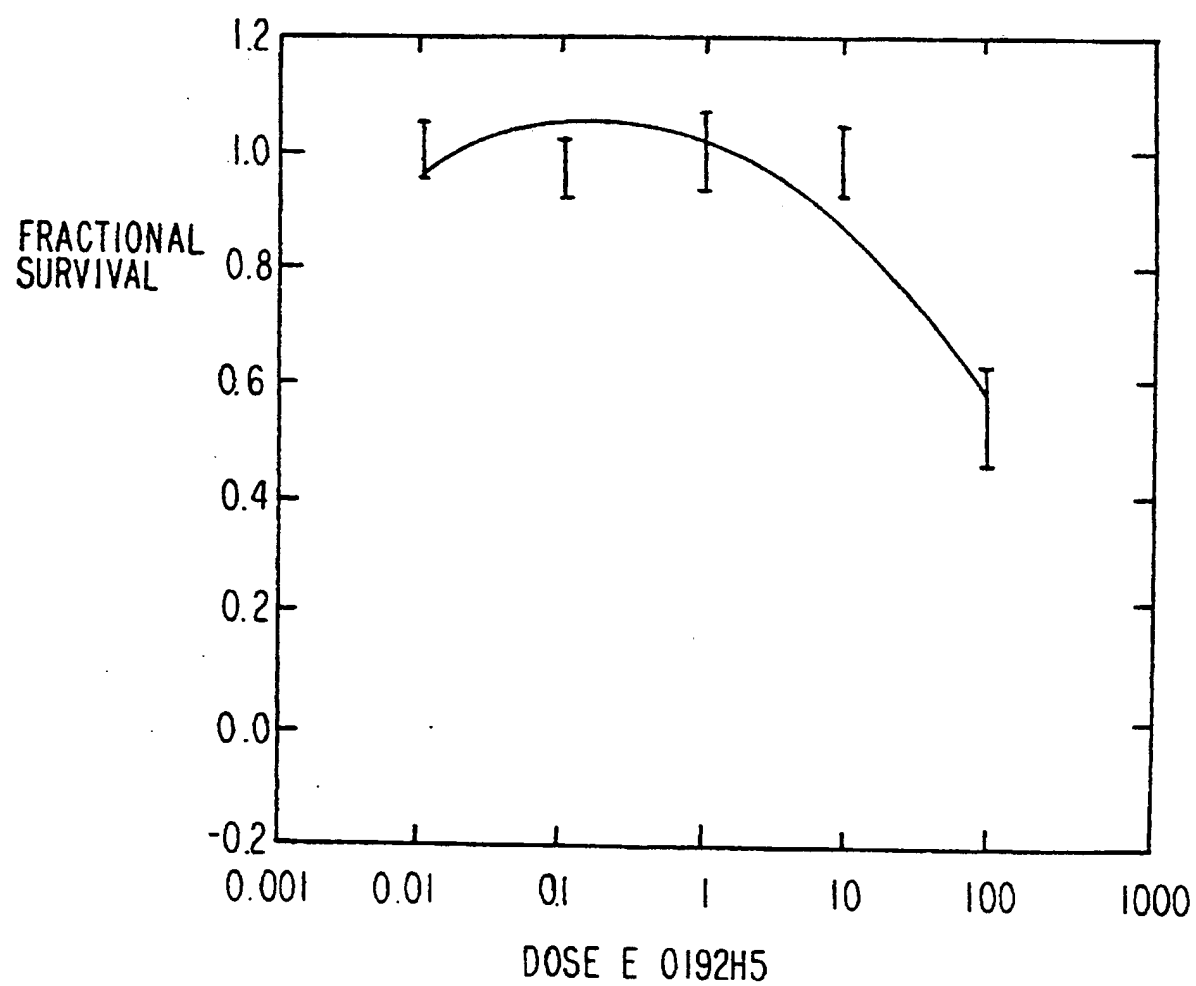


FIG. 9F

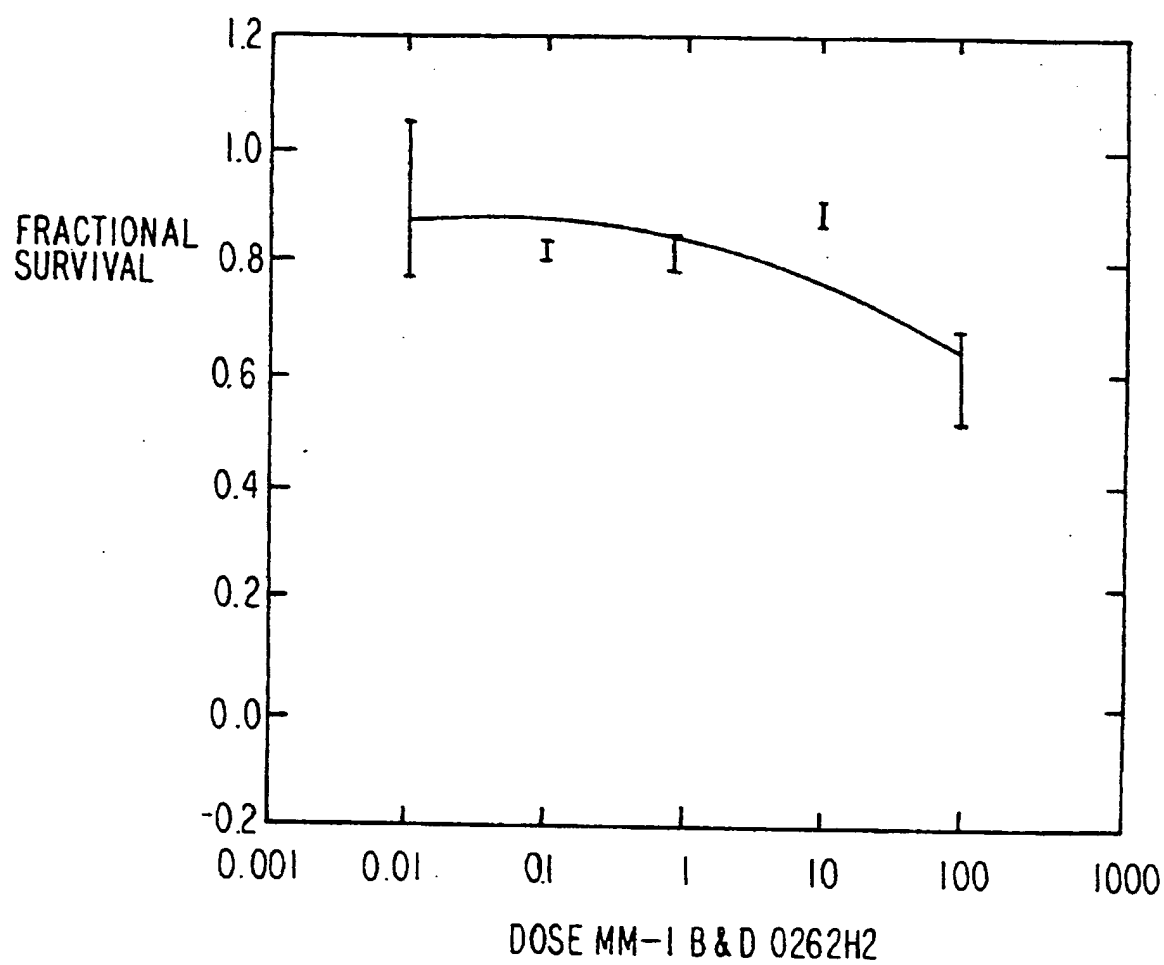


FIG.9G

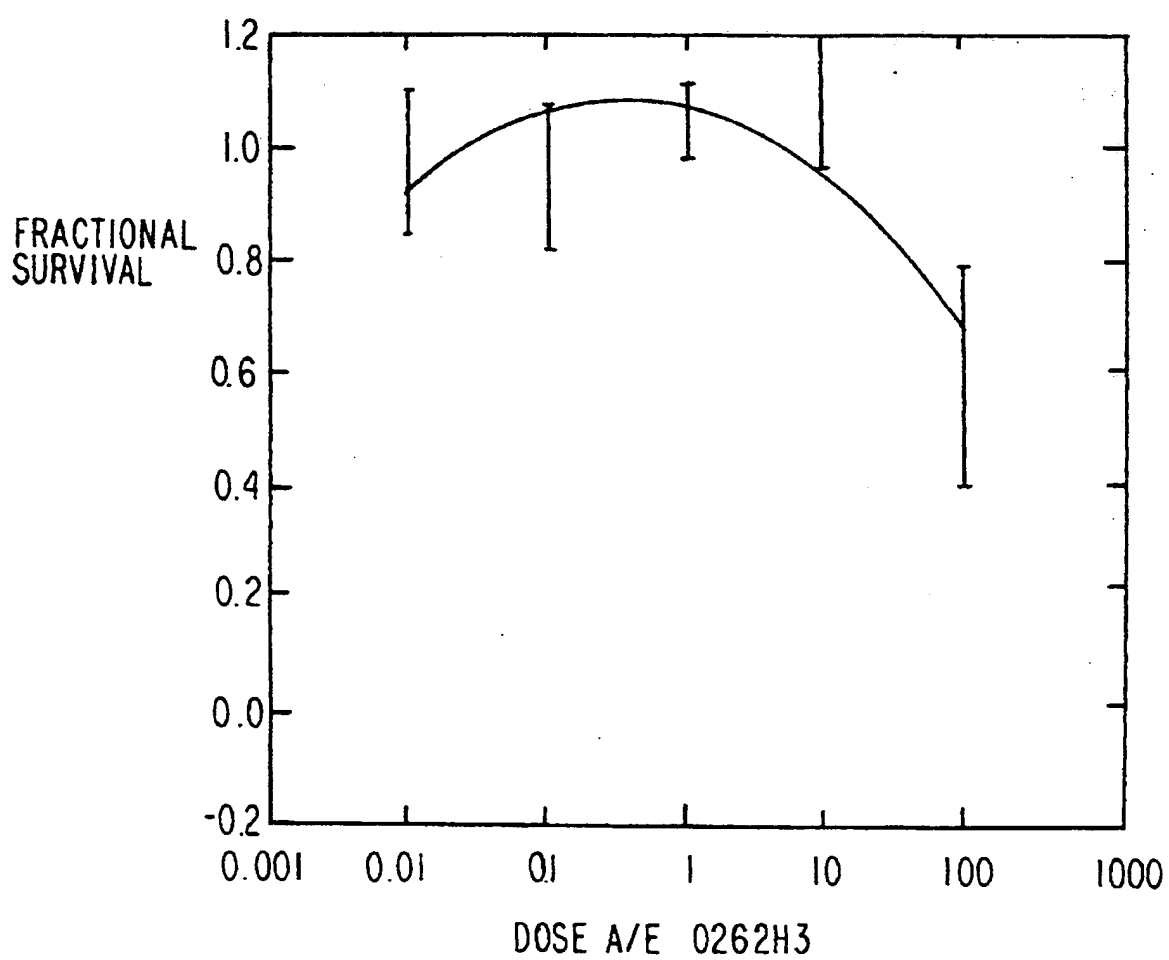


FIG. 9H

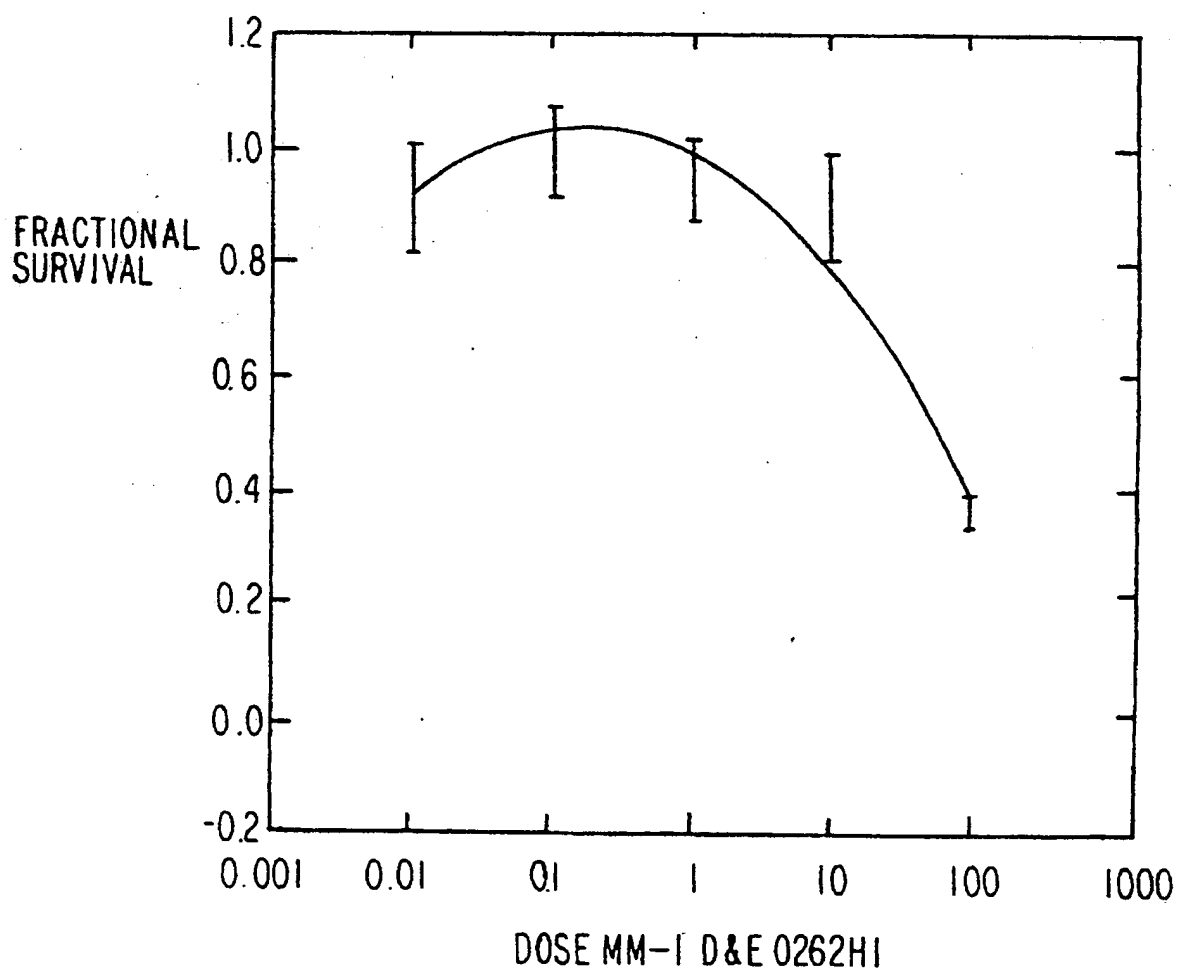


FIG. 10A

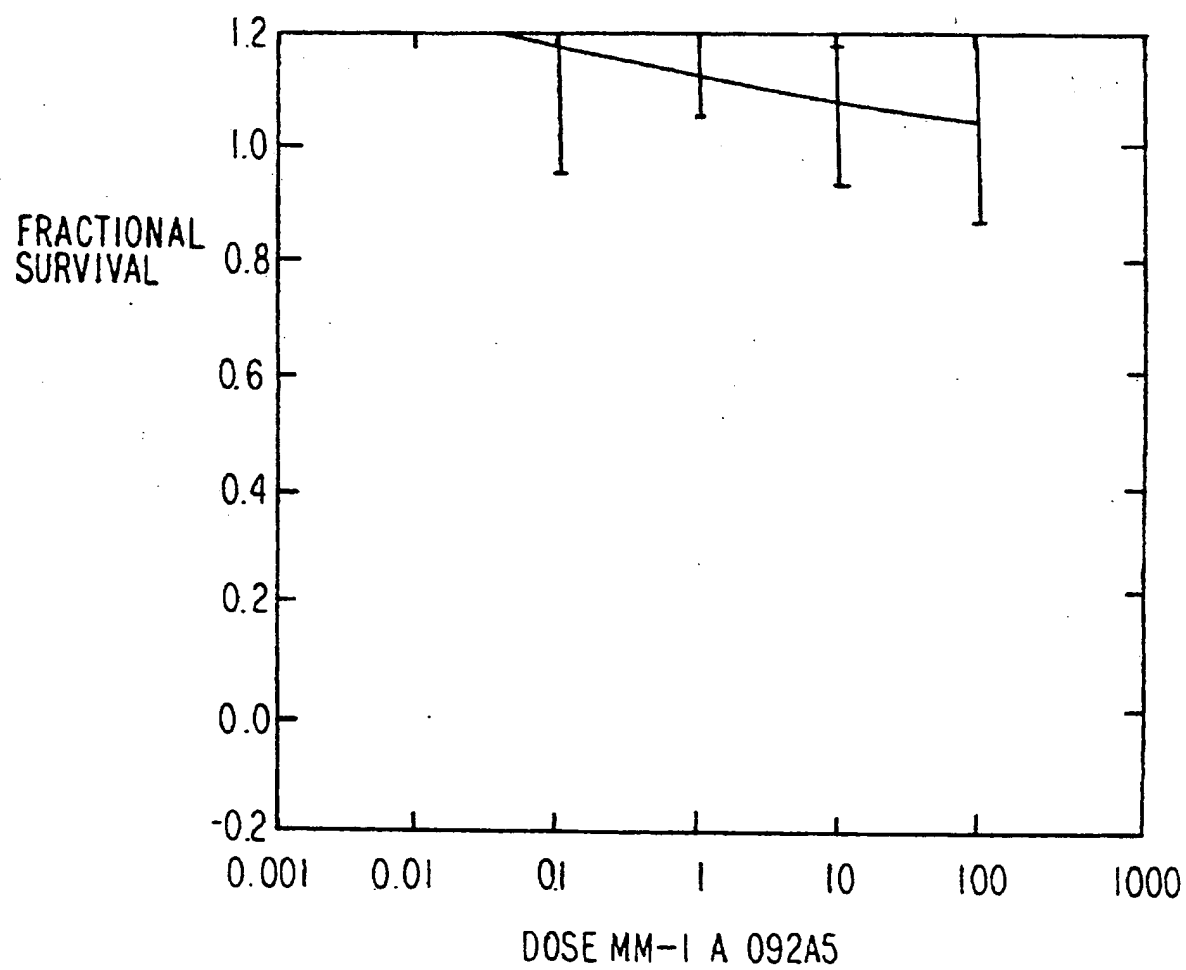


FIG. 10B

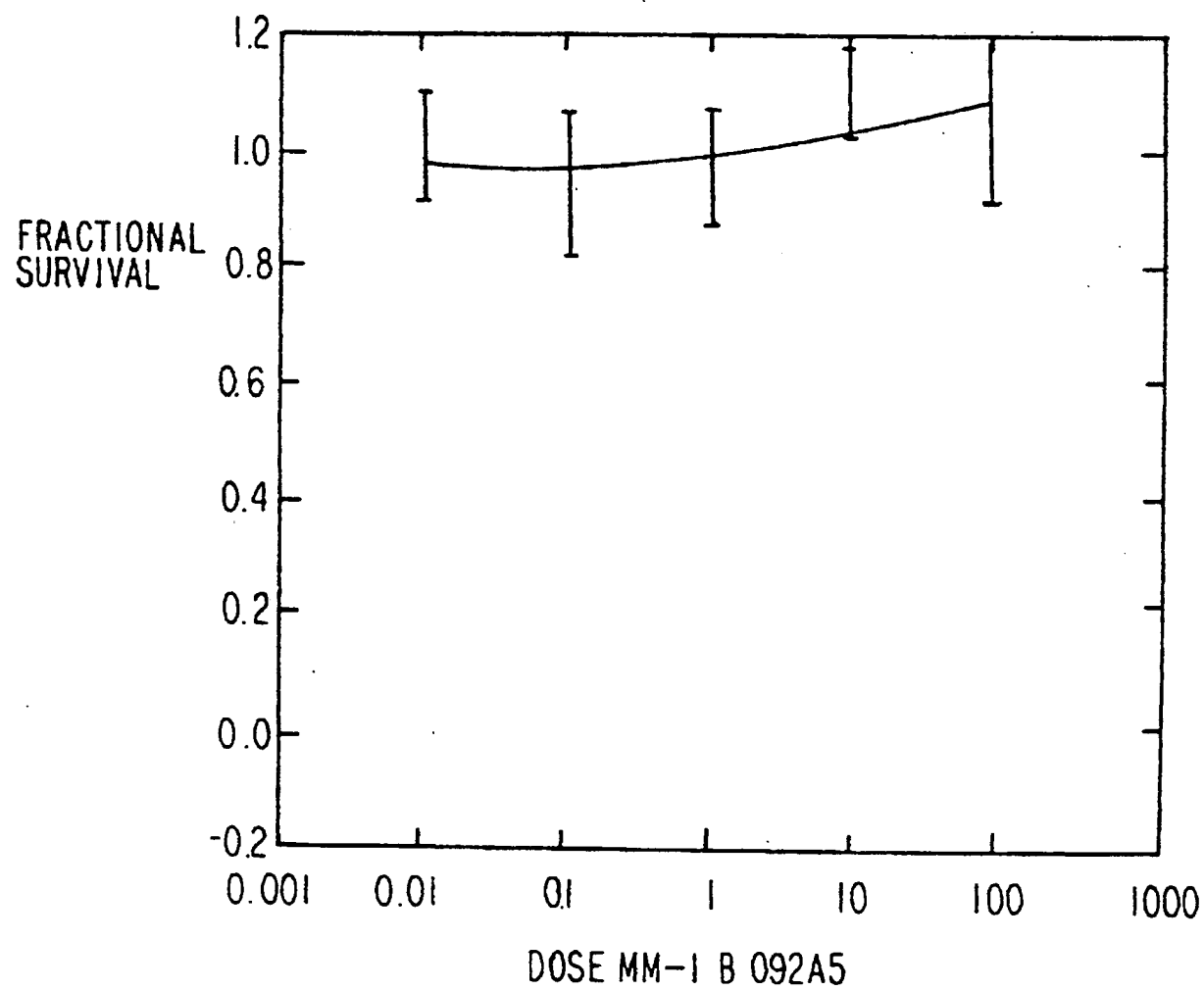


FIG. 10C

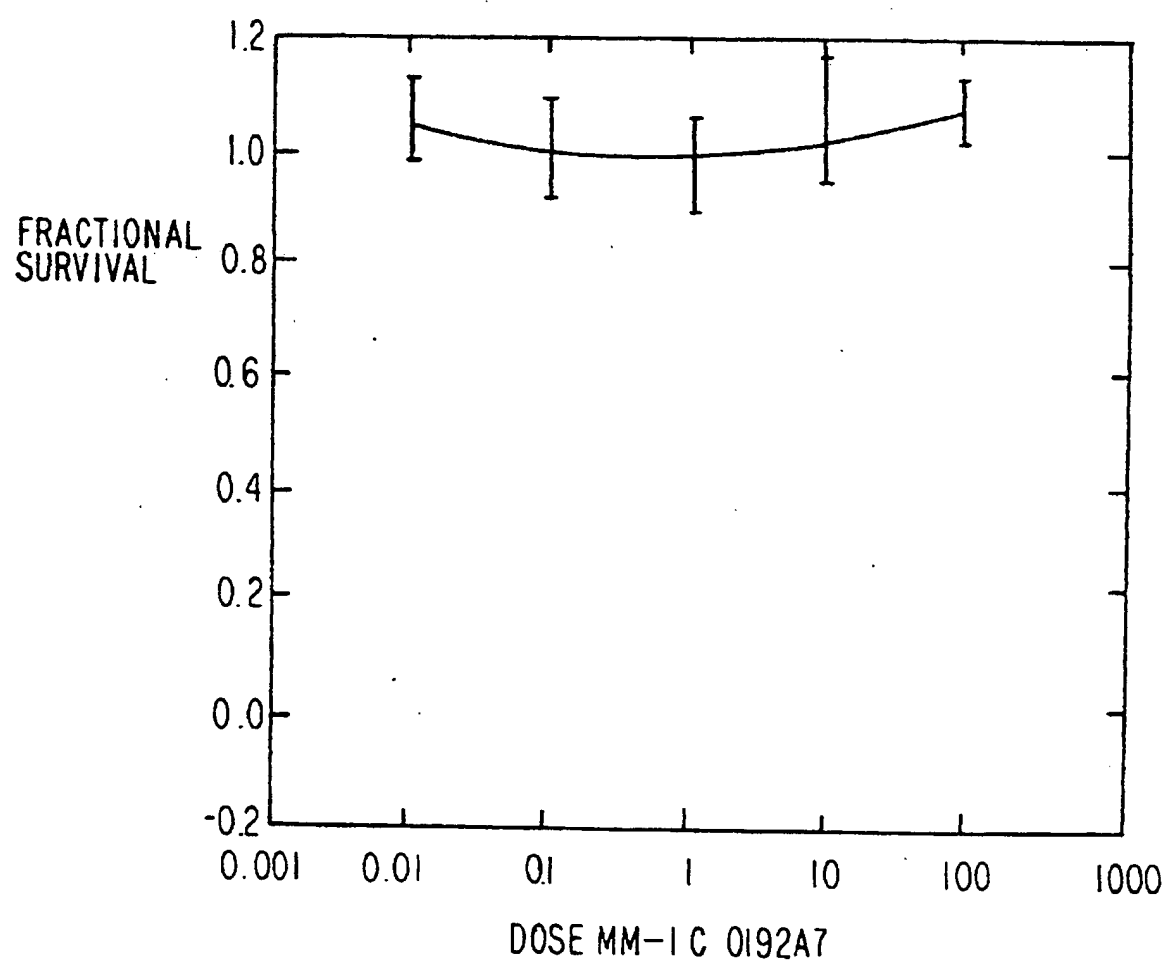


FIG. 10D

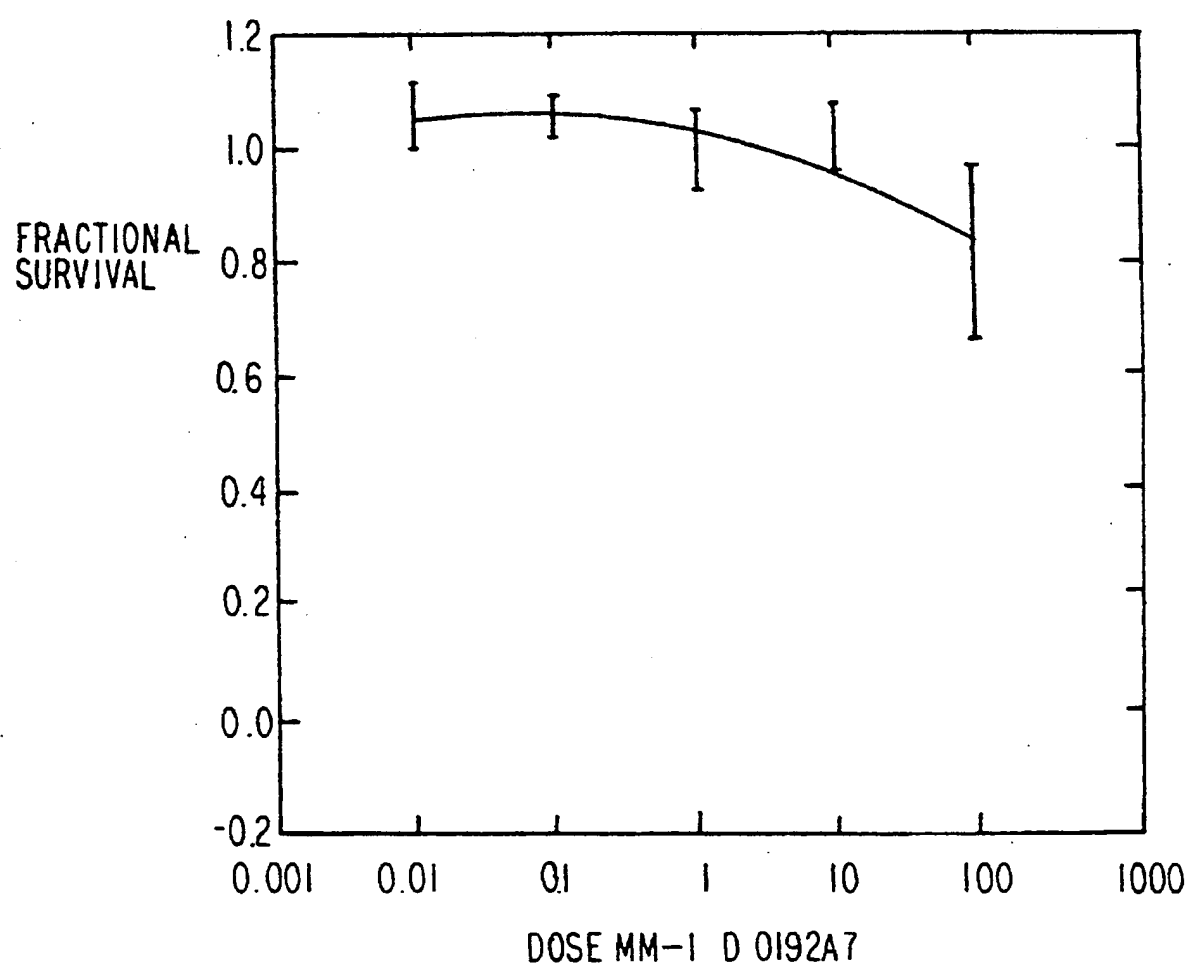


FIG. 10E

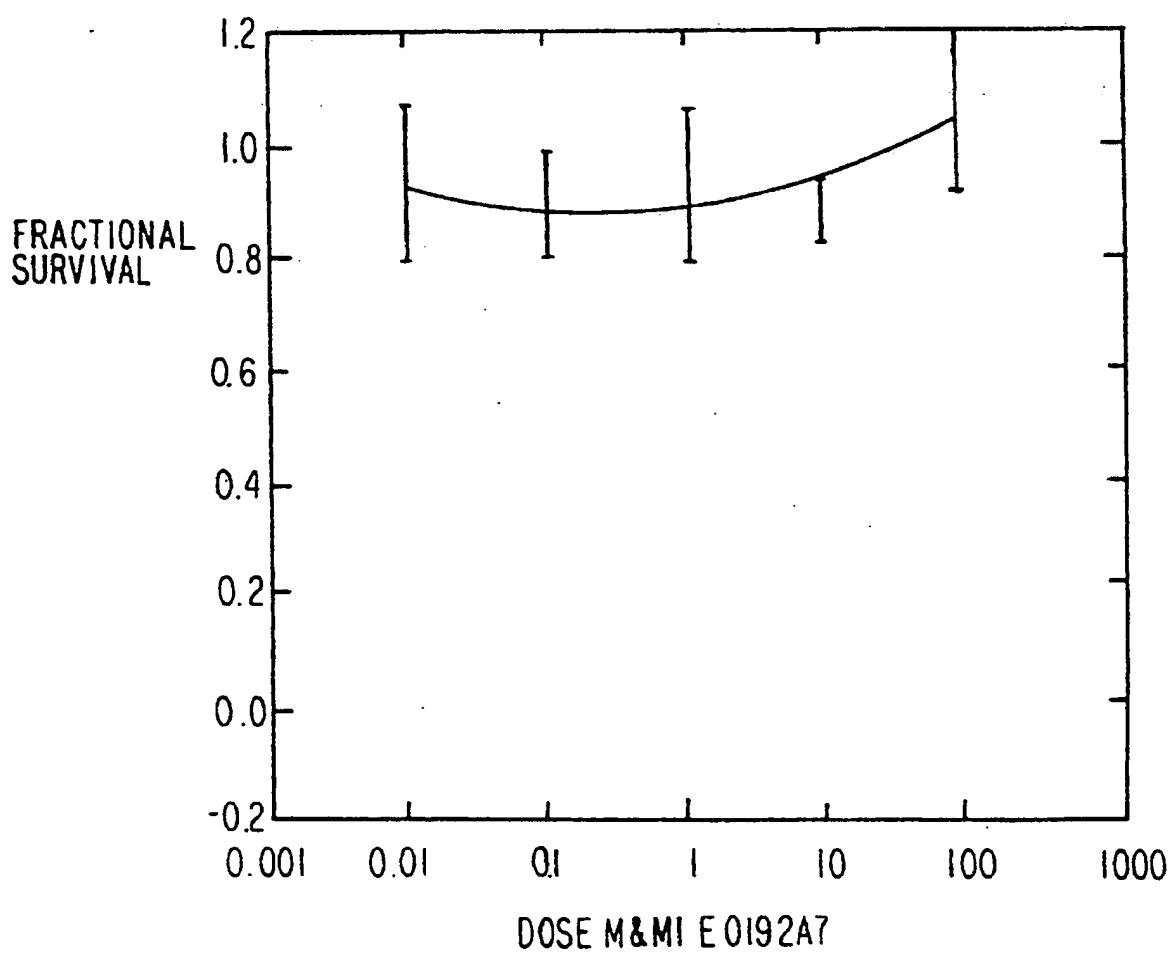


FIG. 10F

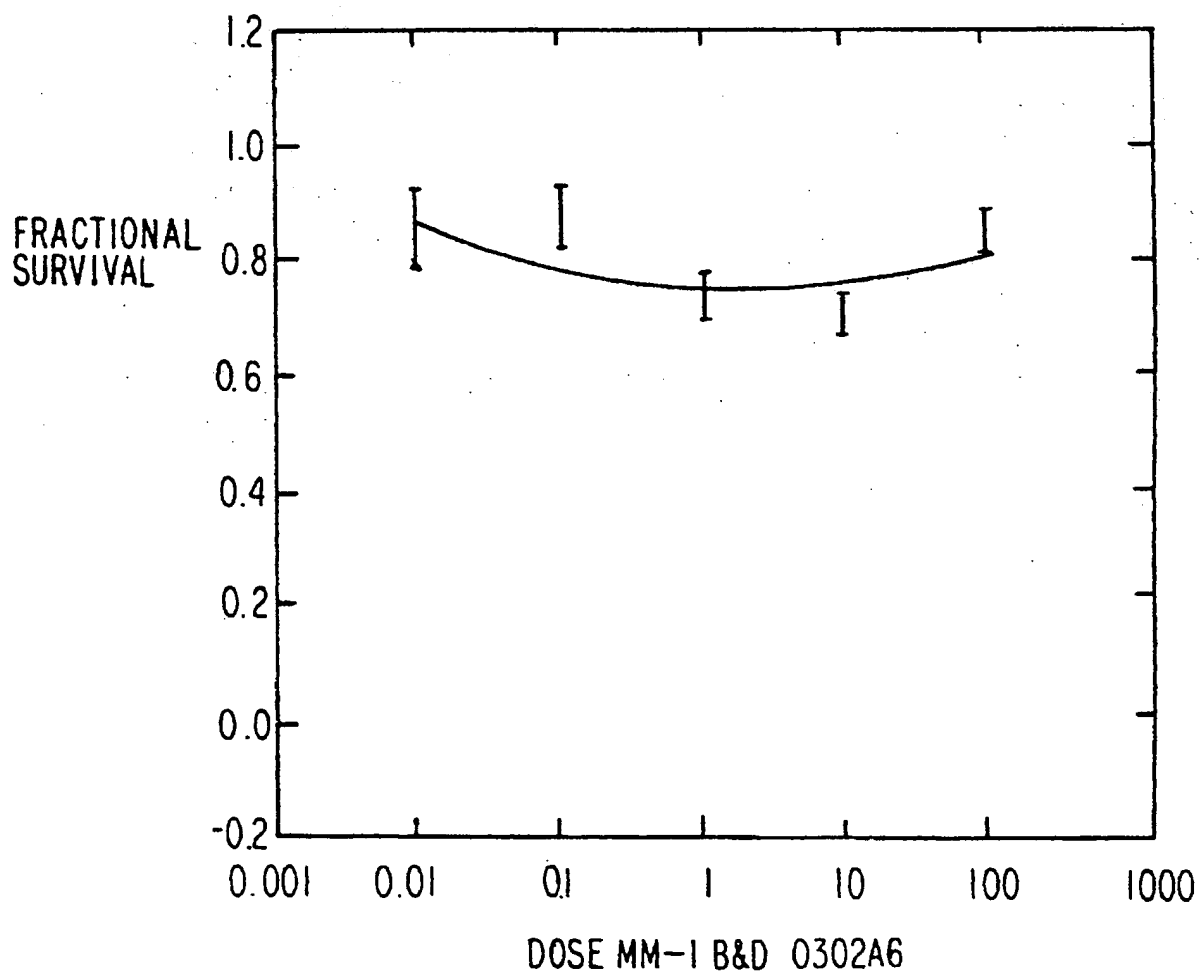


FIG.10G

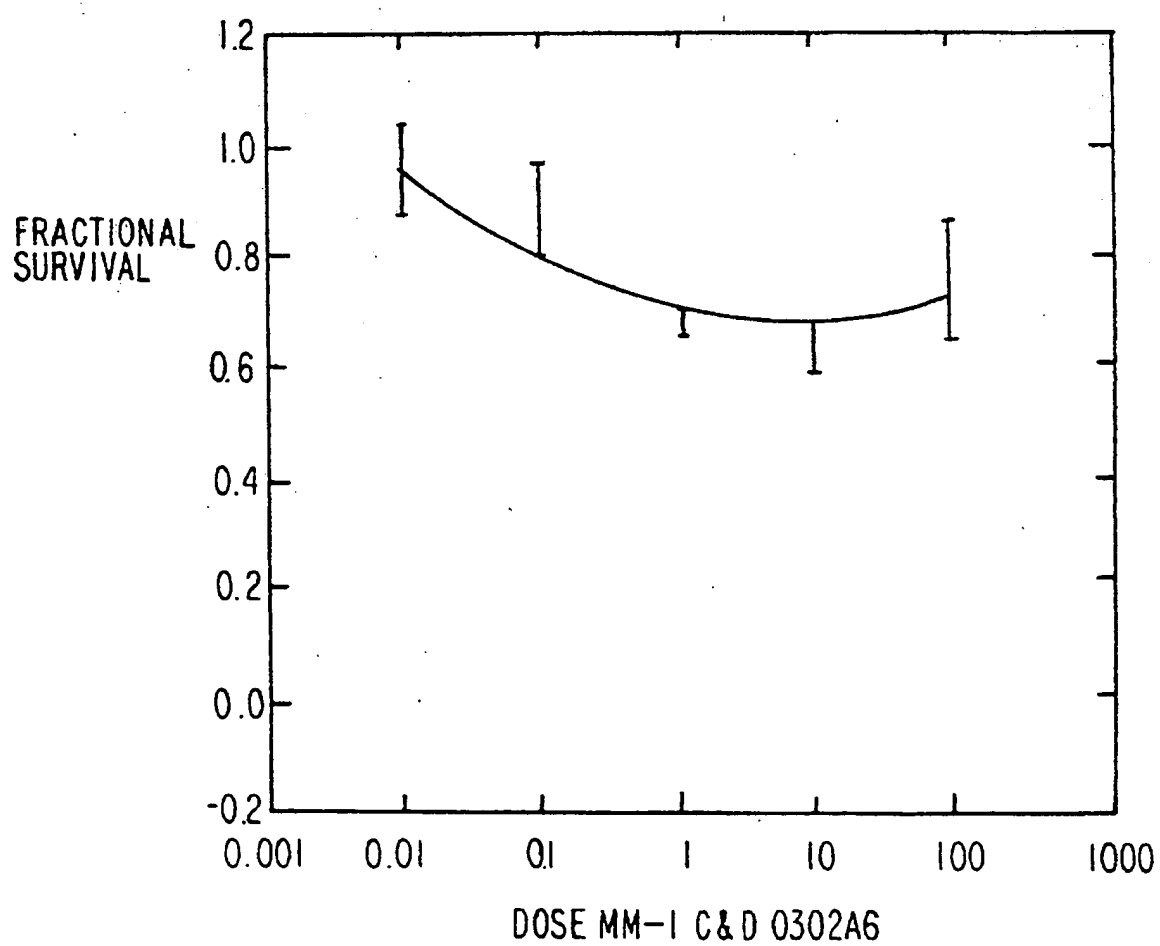


FIG. 10H

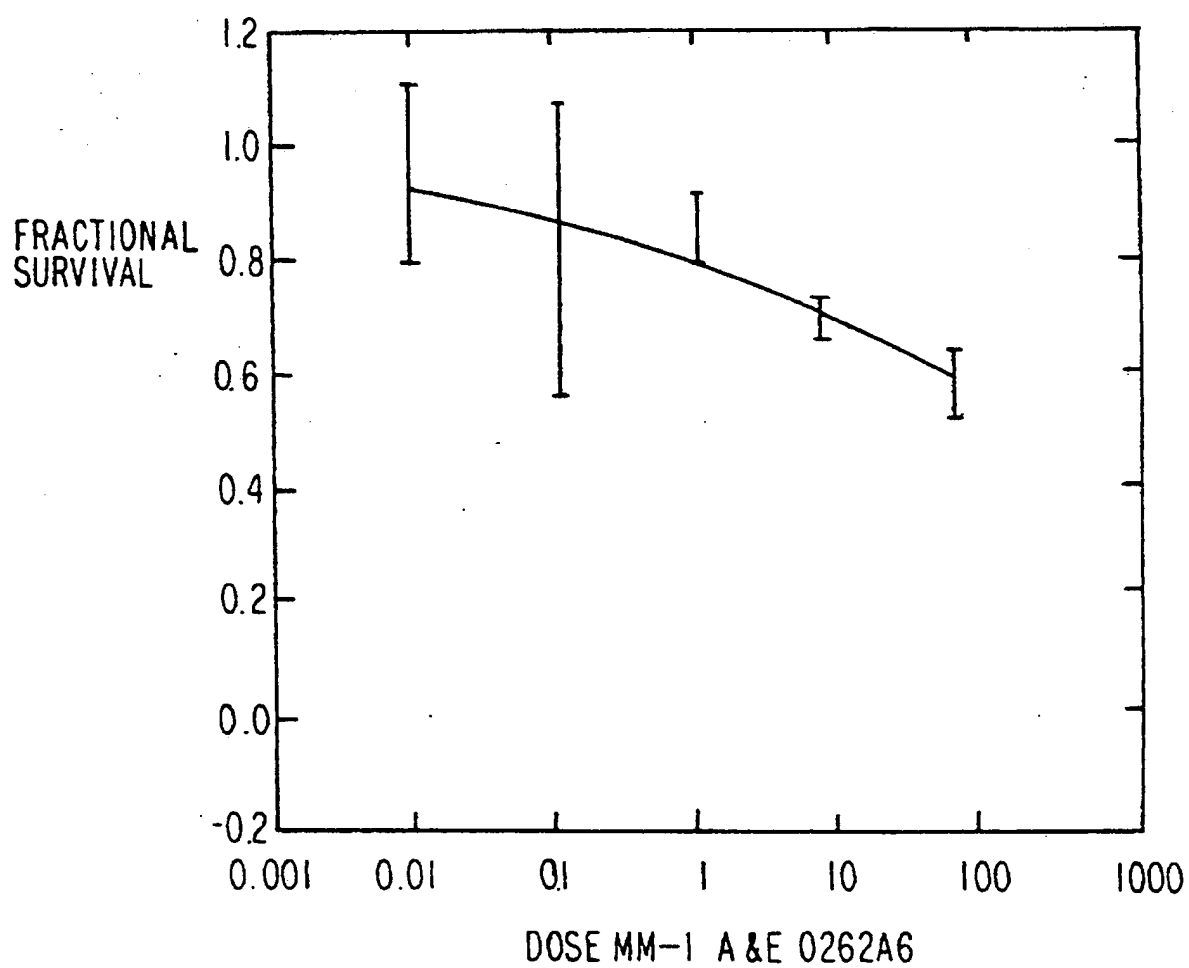


FIG. 11A

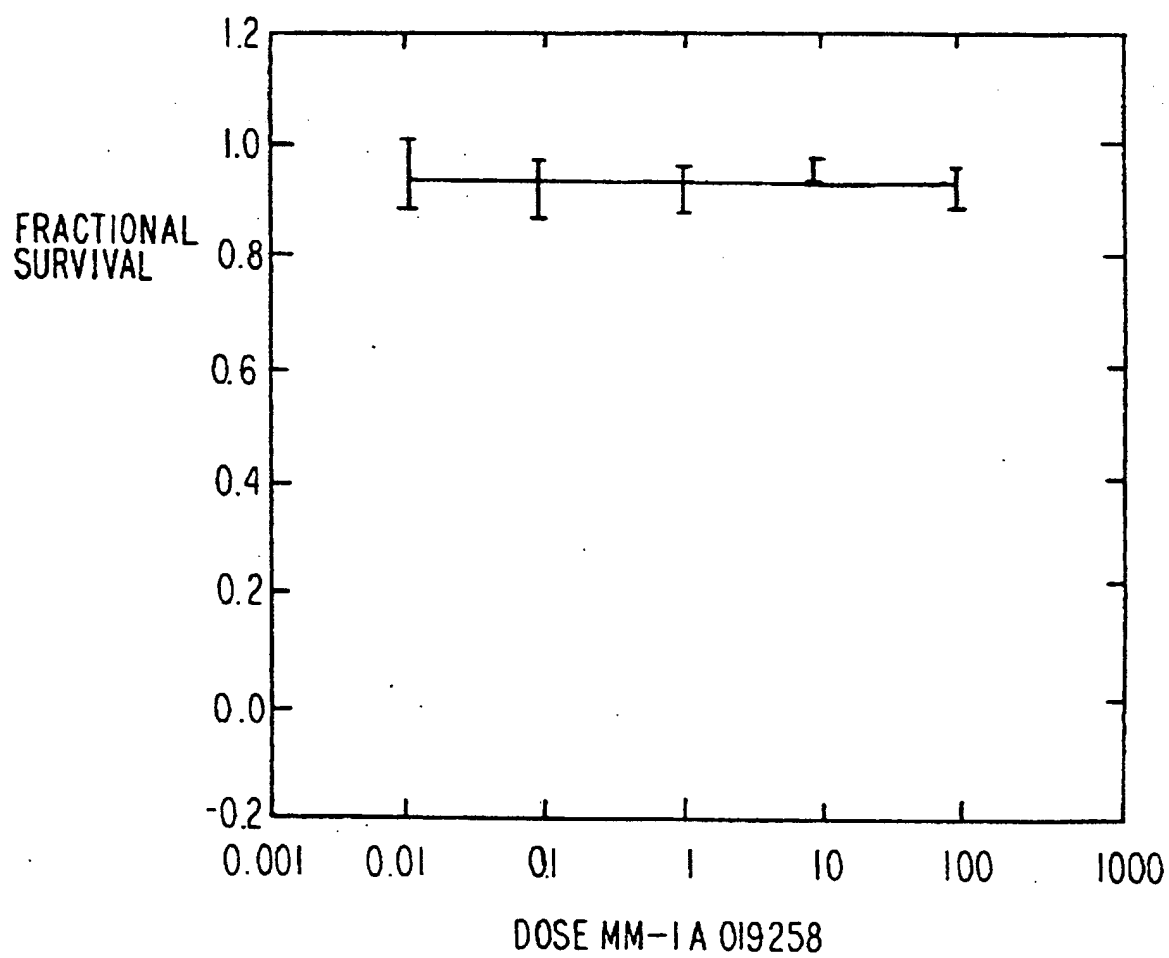


FIG. 11B

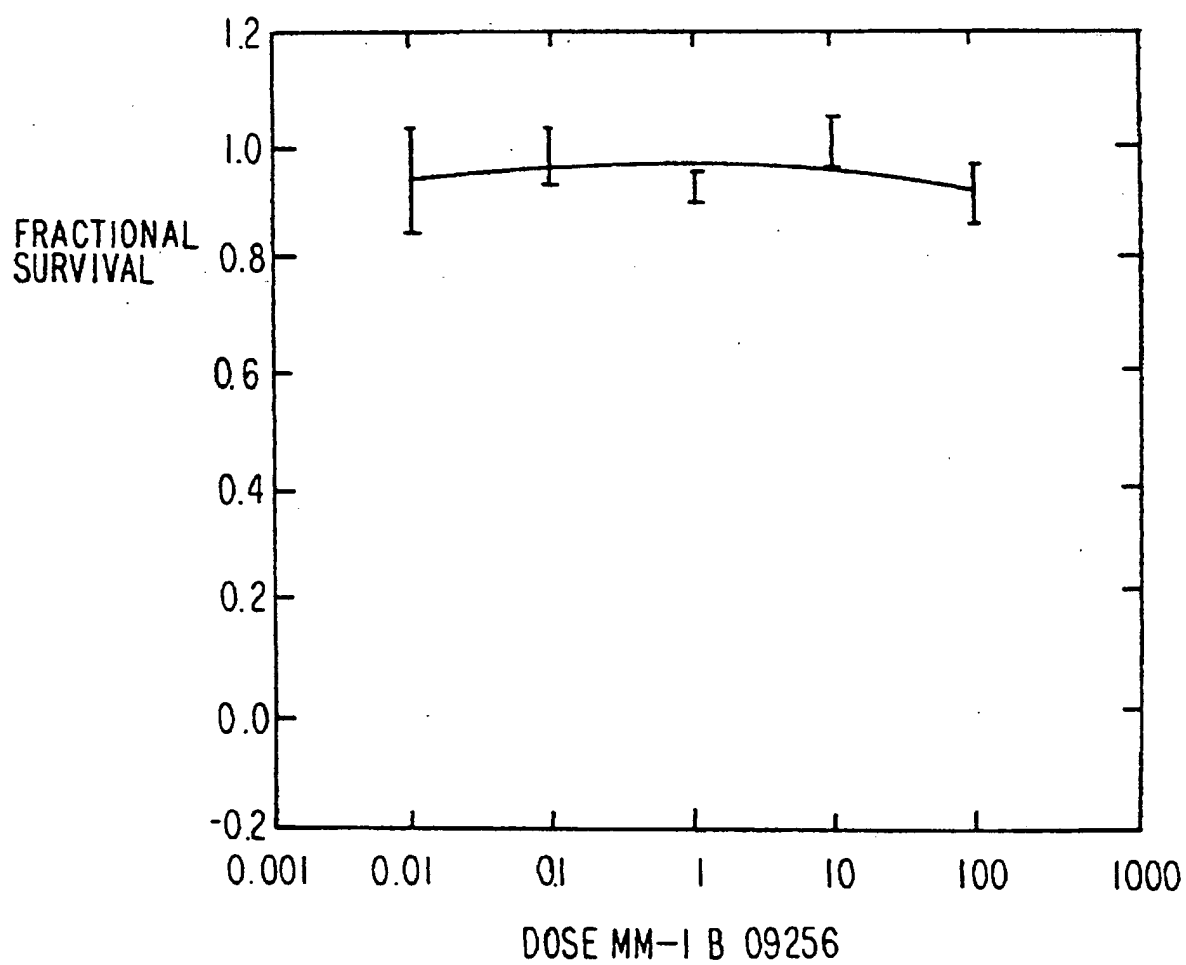
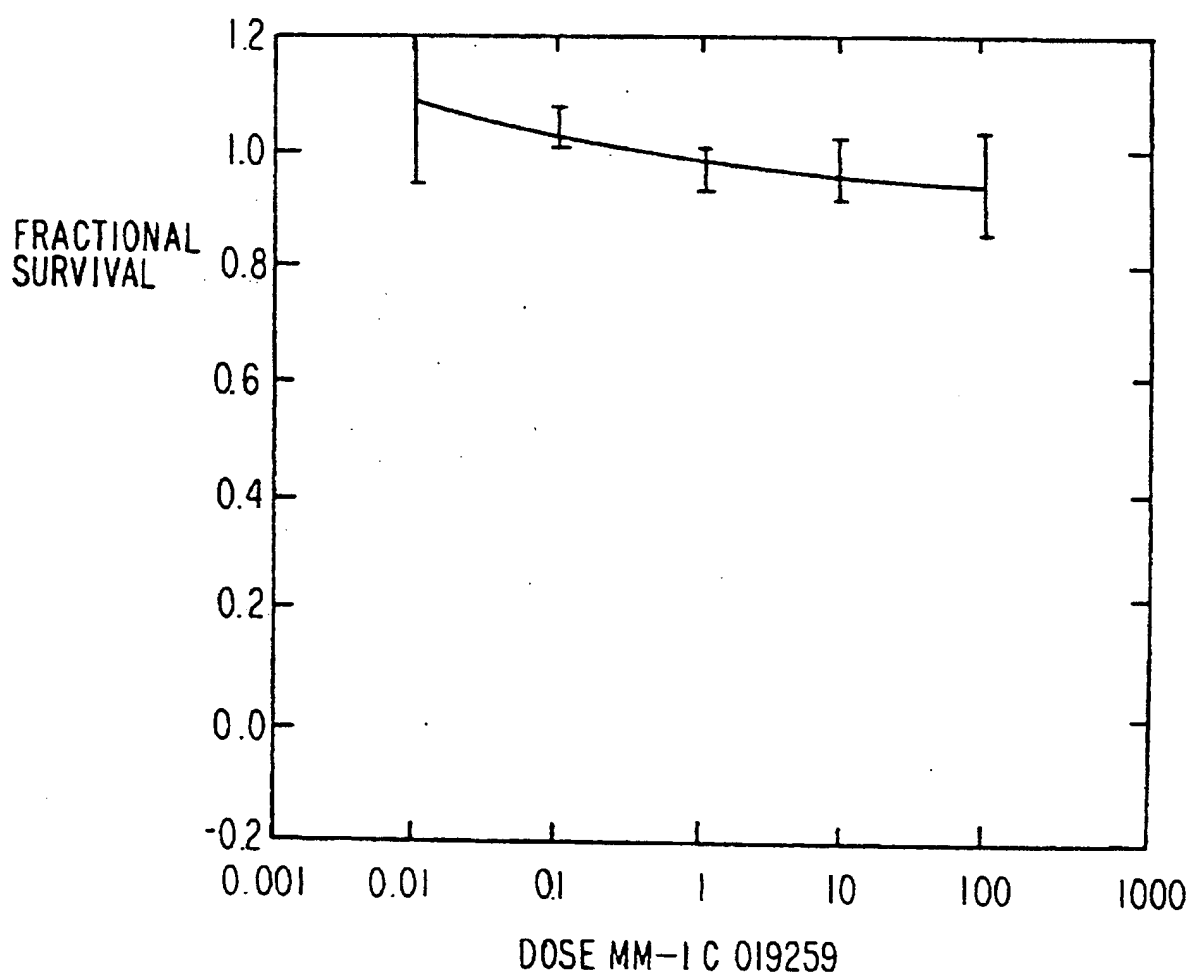


FIG. 1 IC



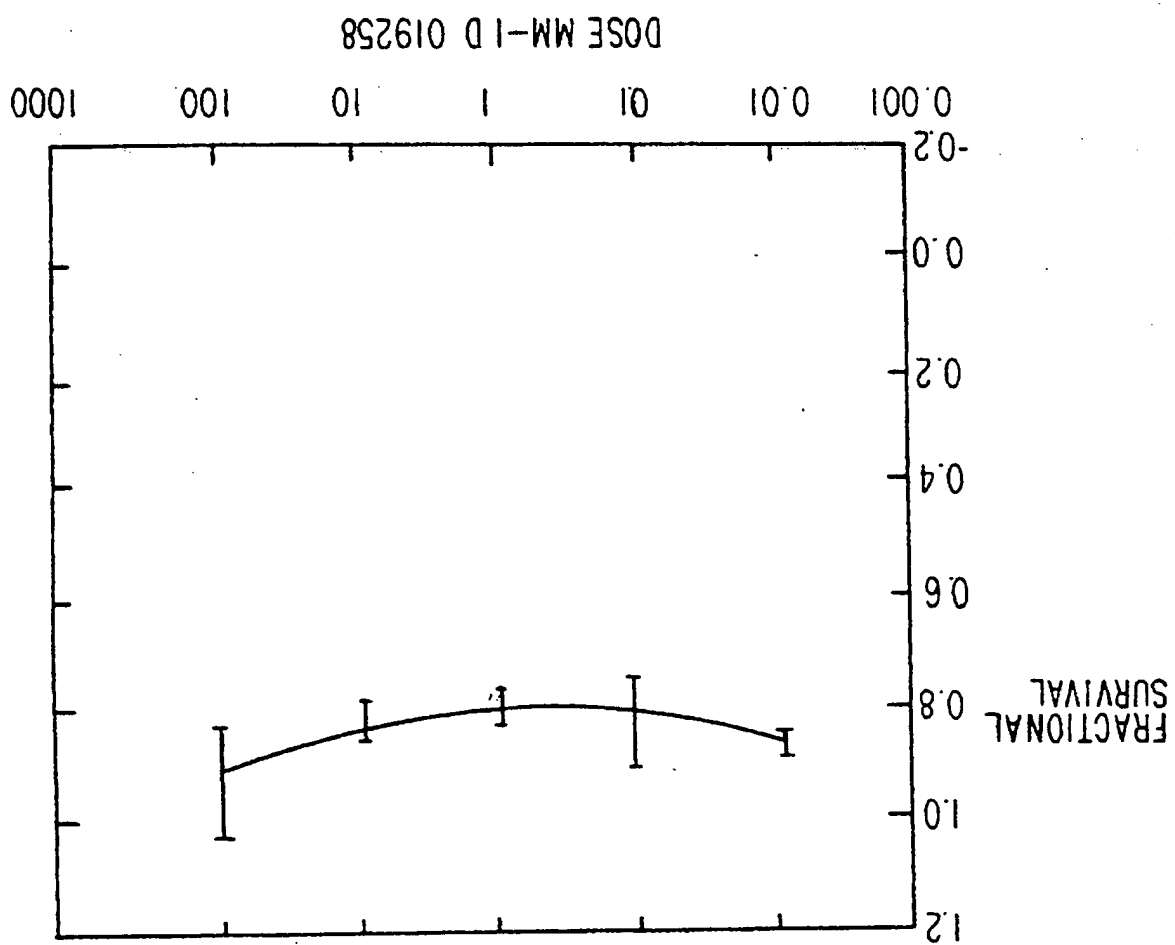


FIG. 11D

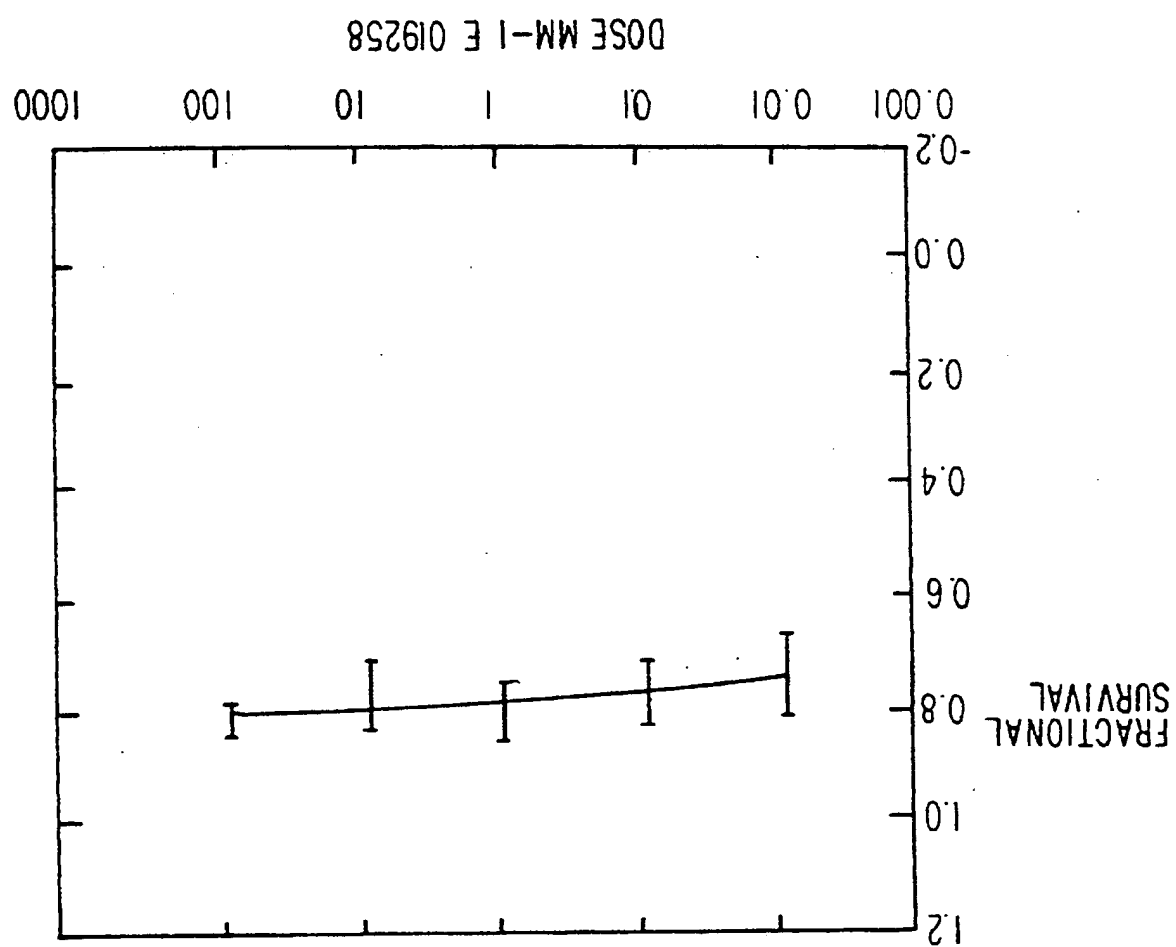


FIG. 1/E

FIG. 11F

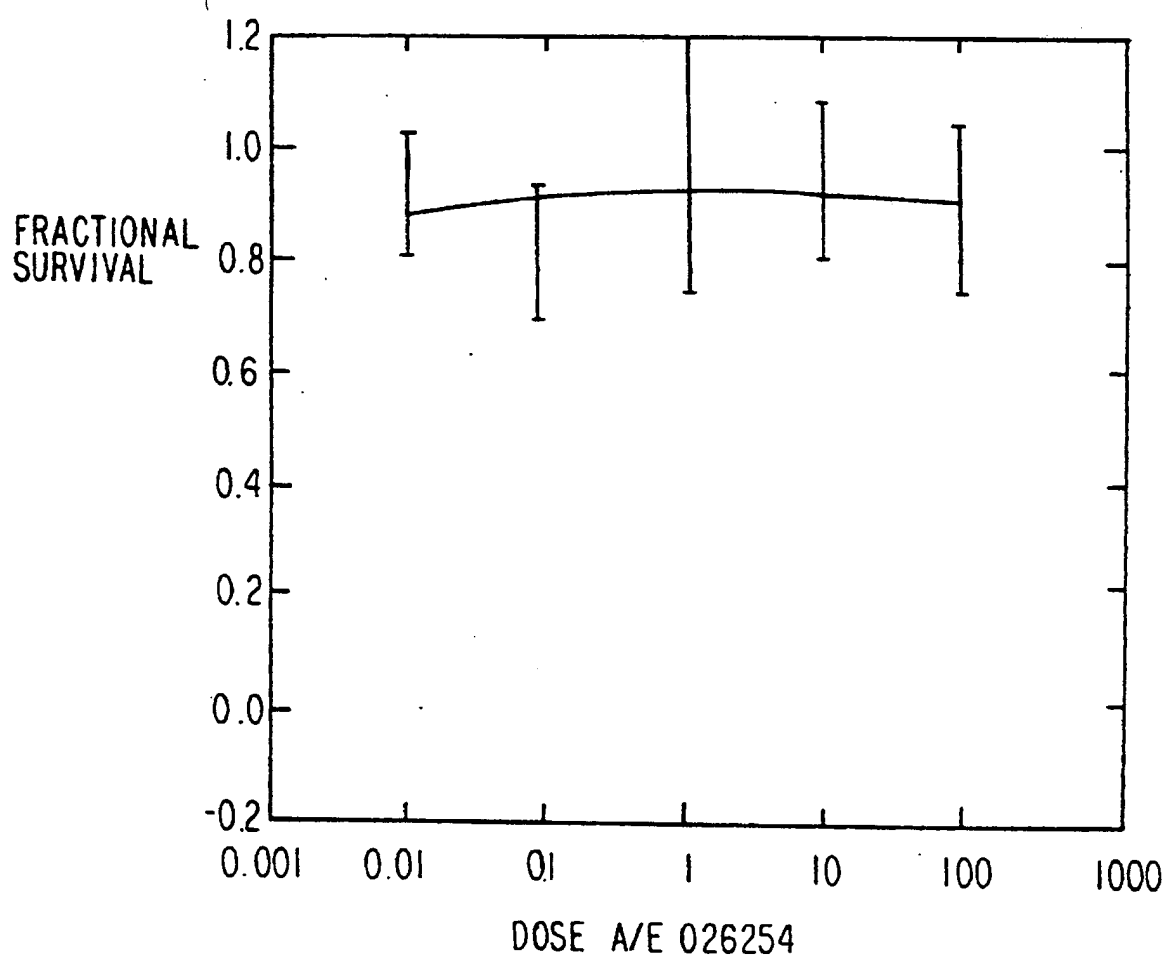


FIG. 11G

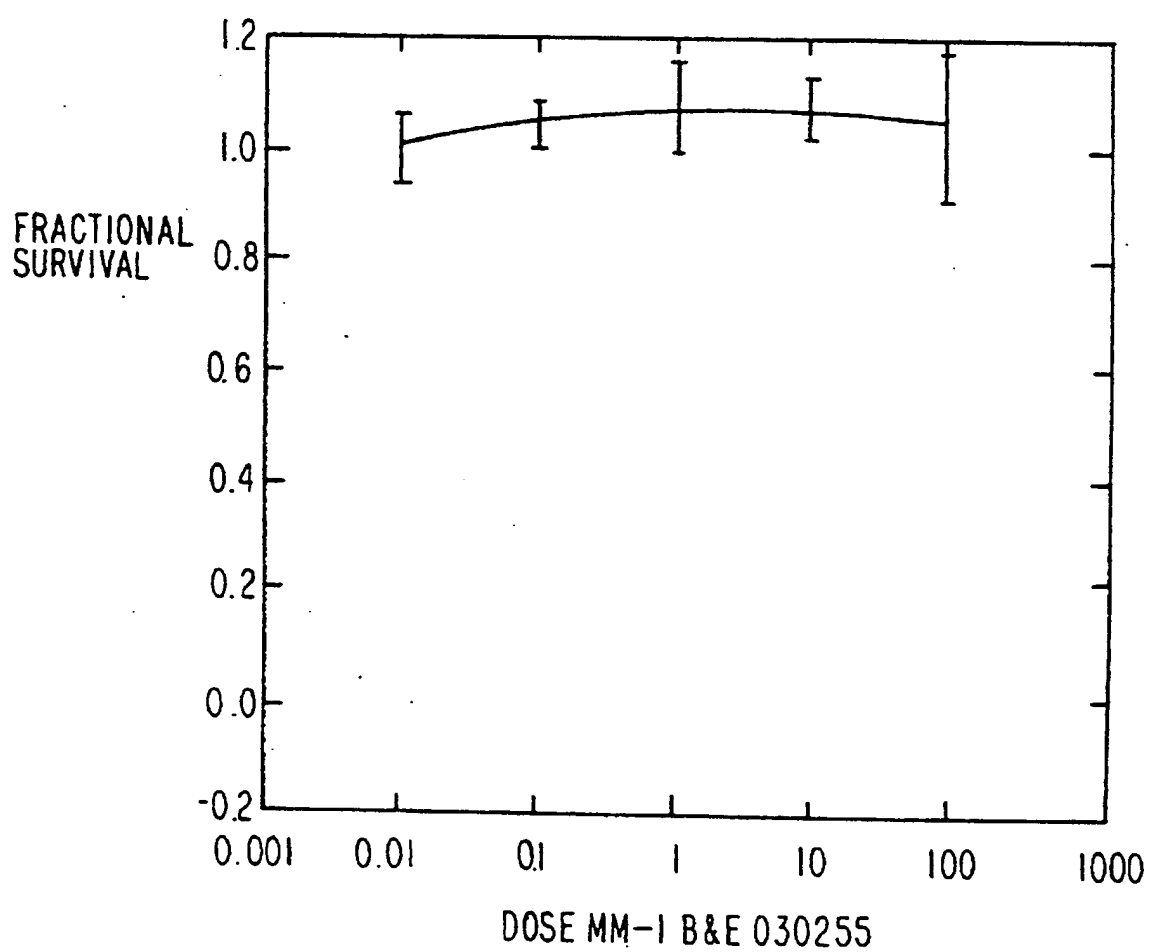


FIG. 11H

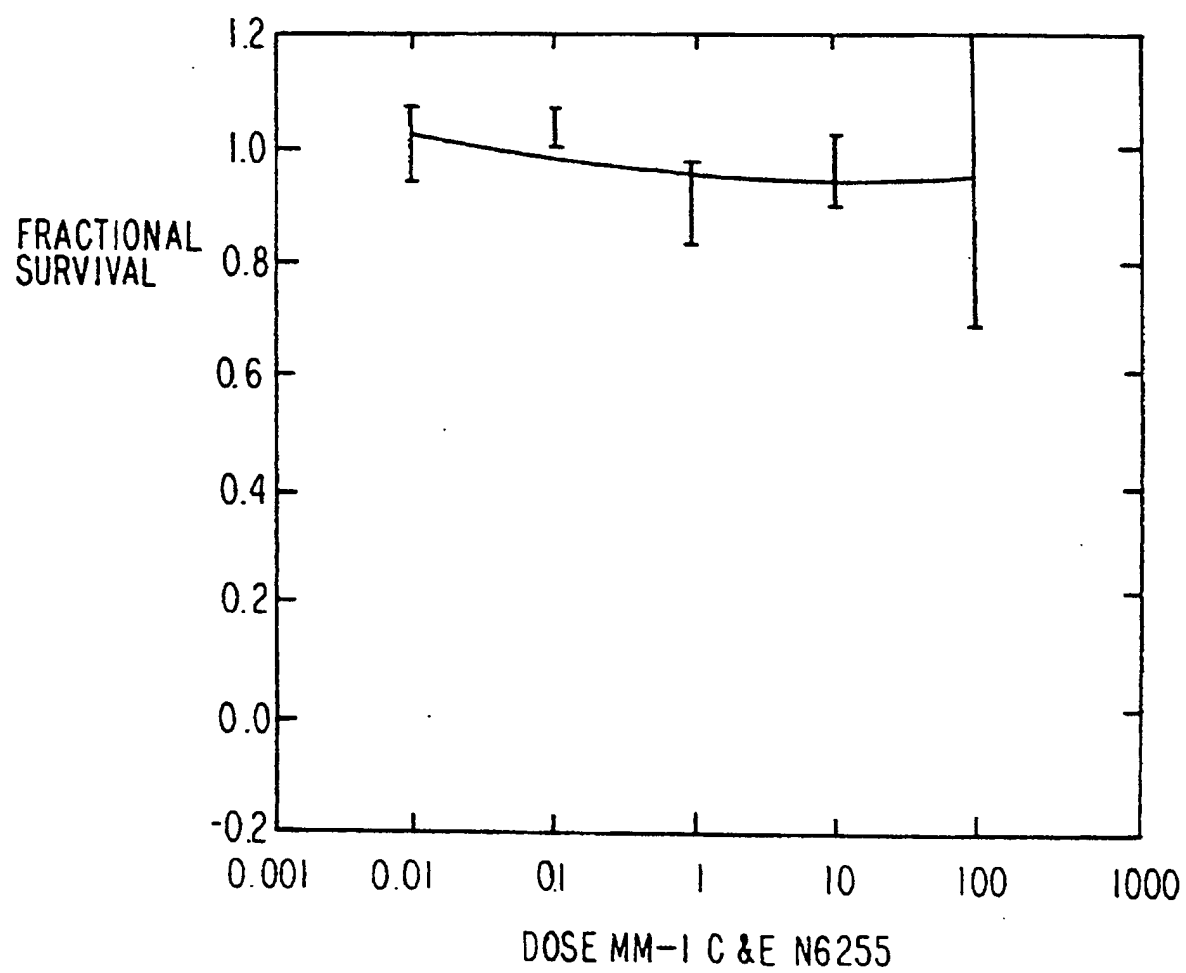


FIG. 12A

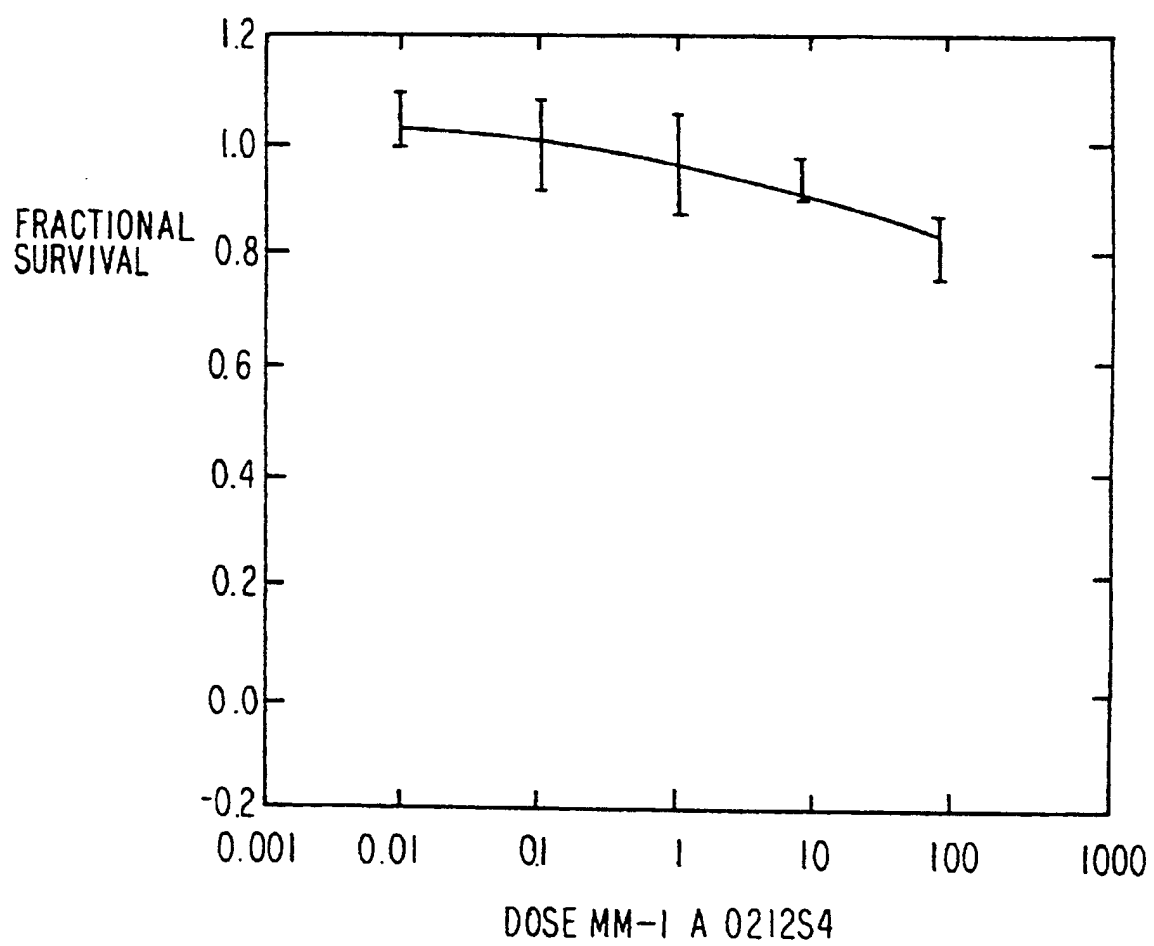


FIG. 12B

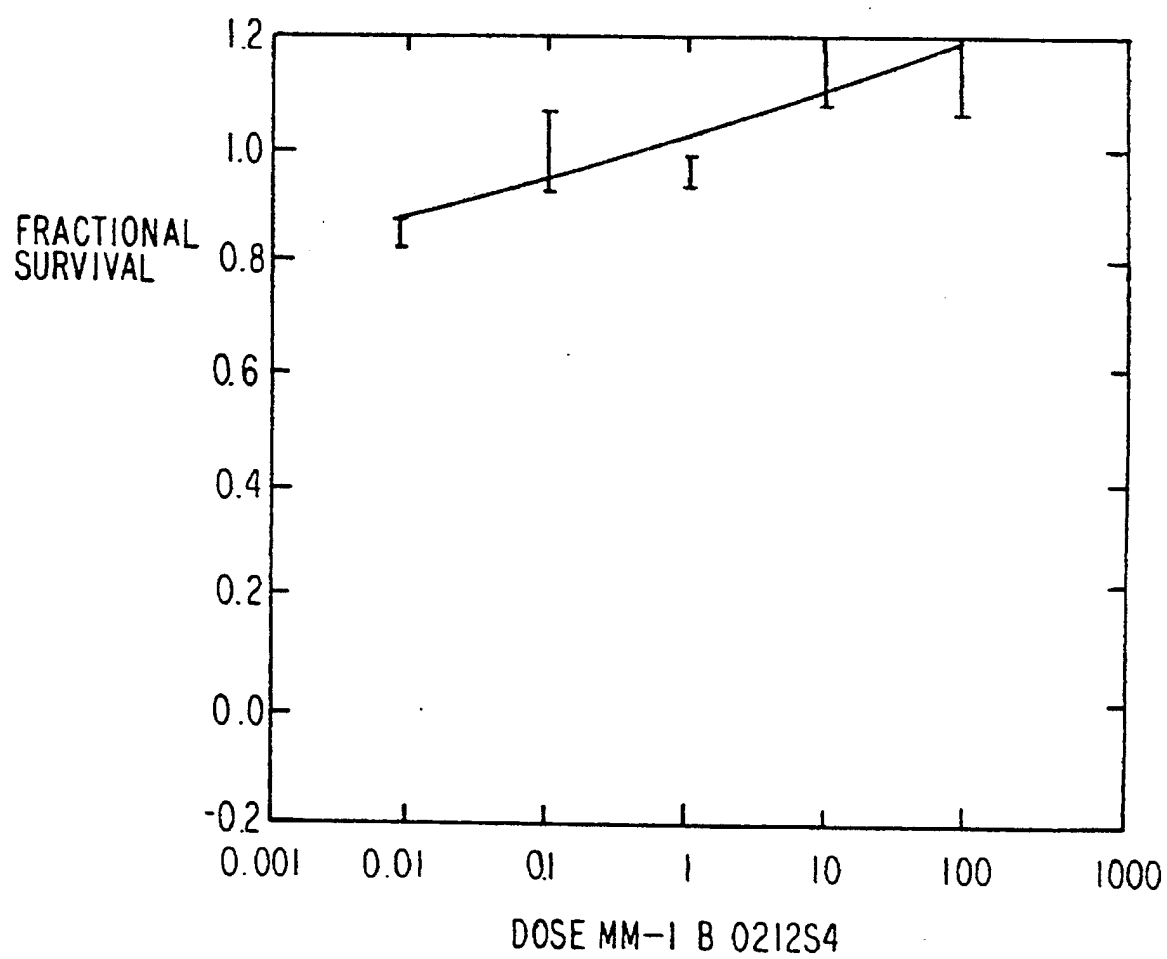


FIG. 12C

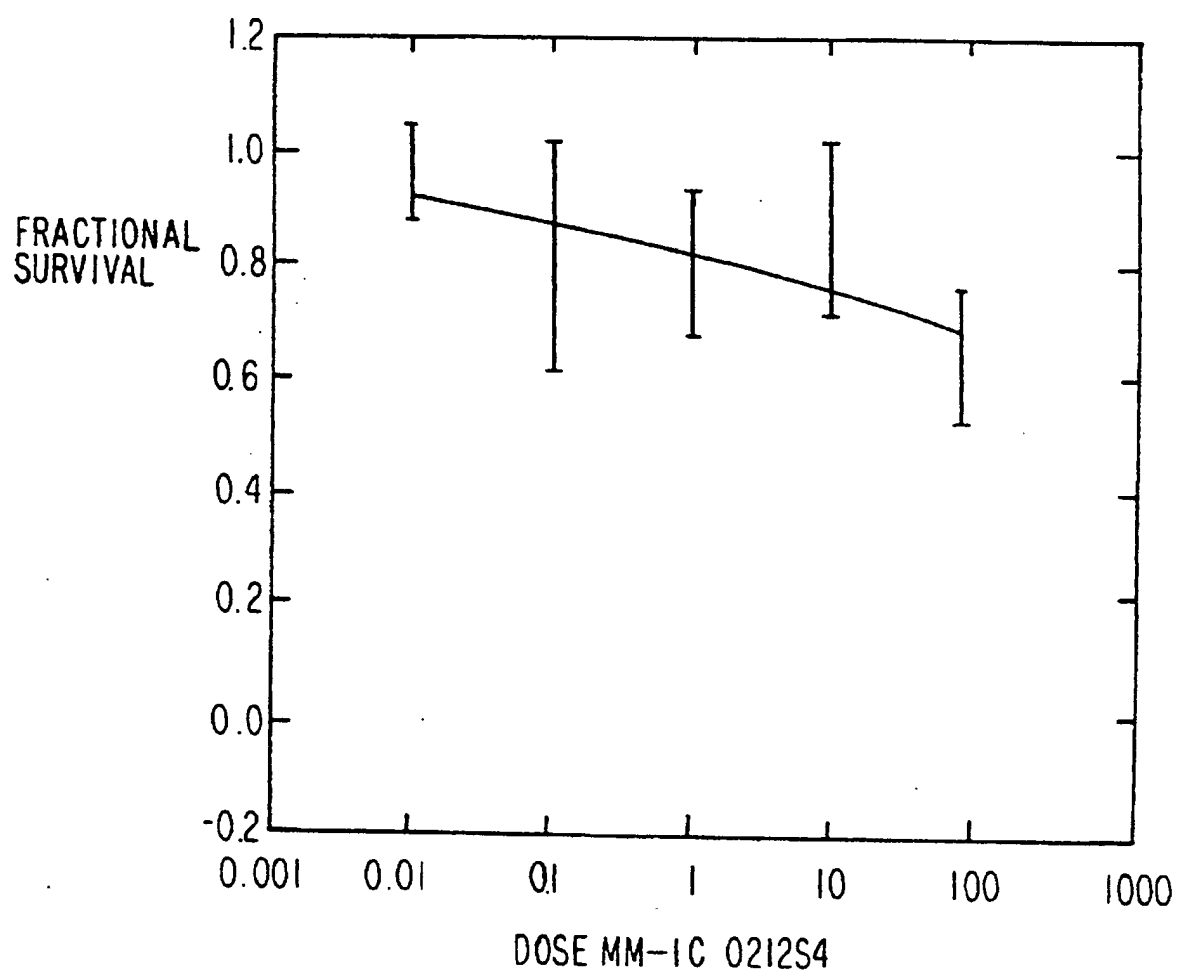


FIG. 12D

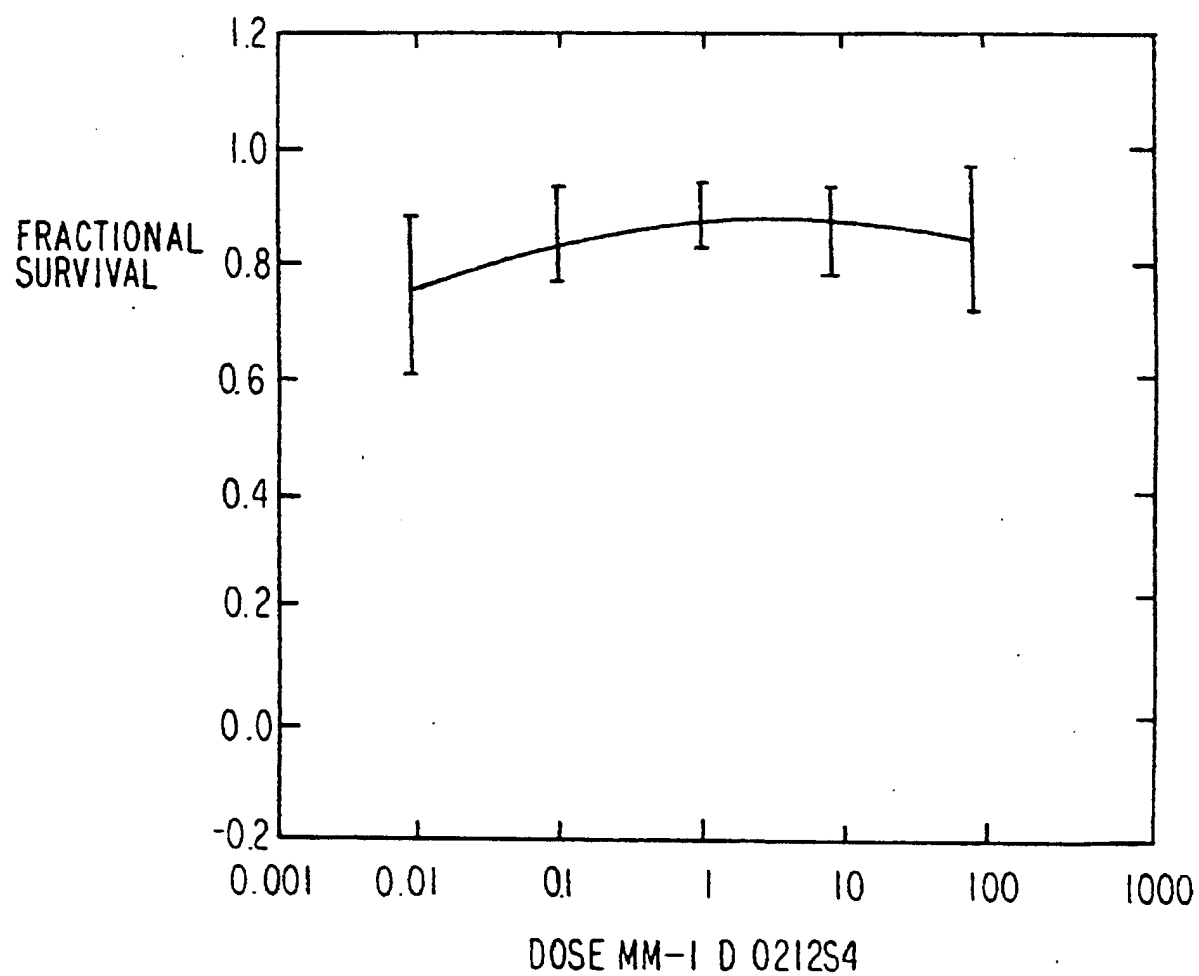


FIG. 12E

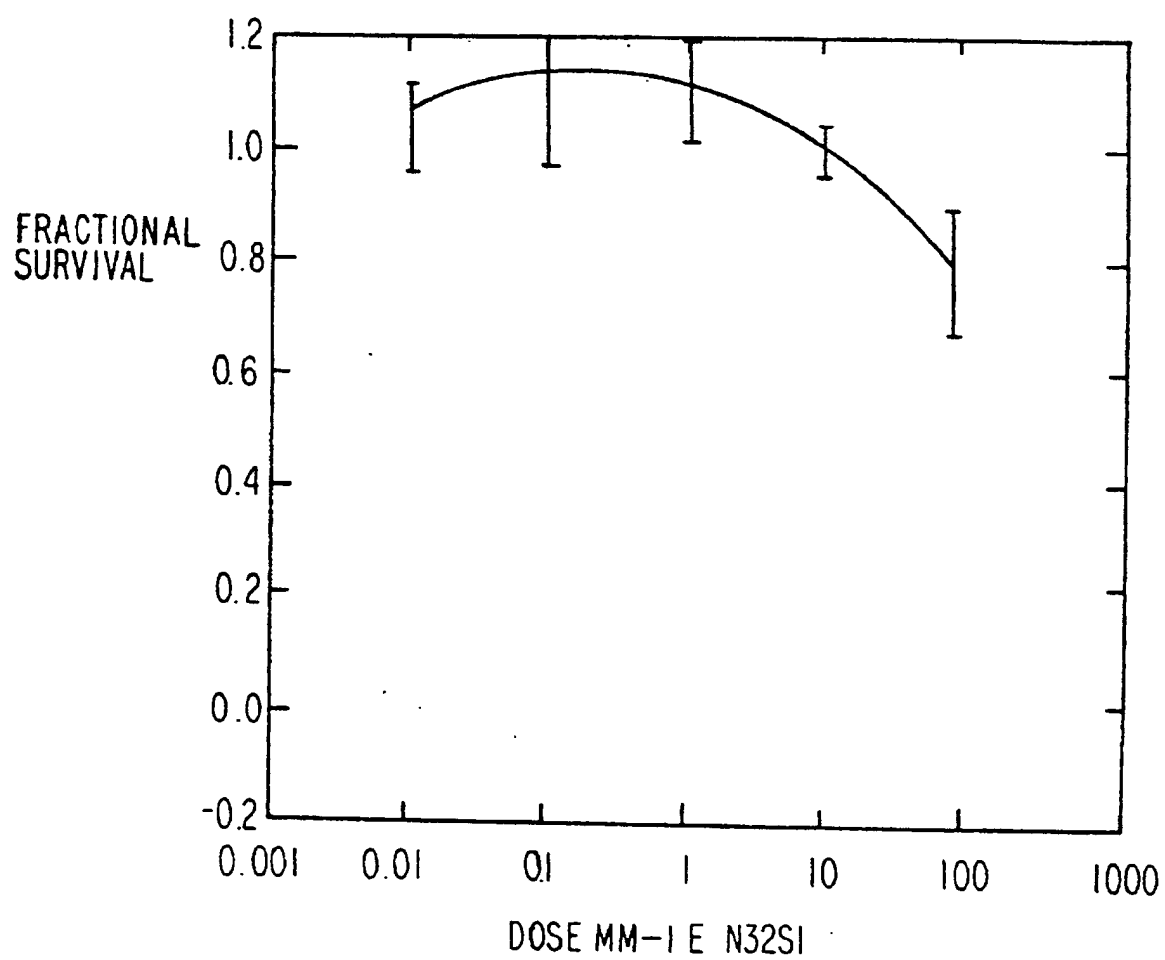
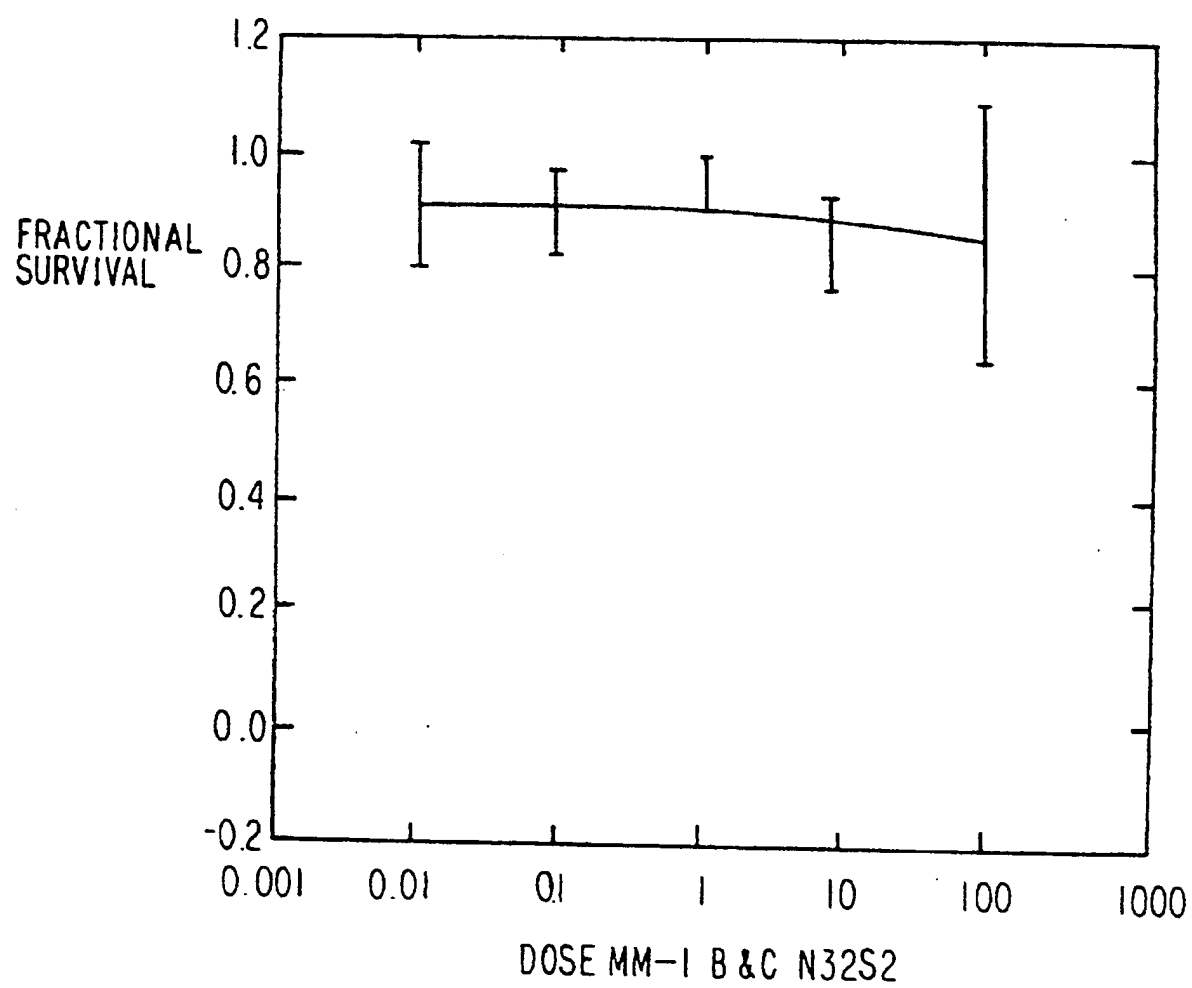


FIG. 12F



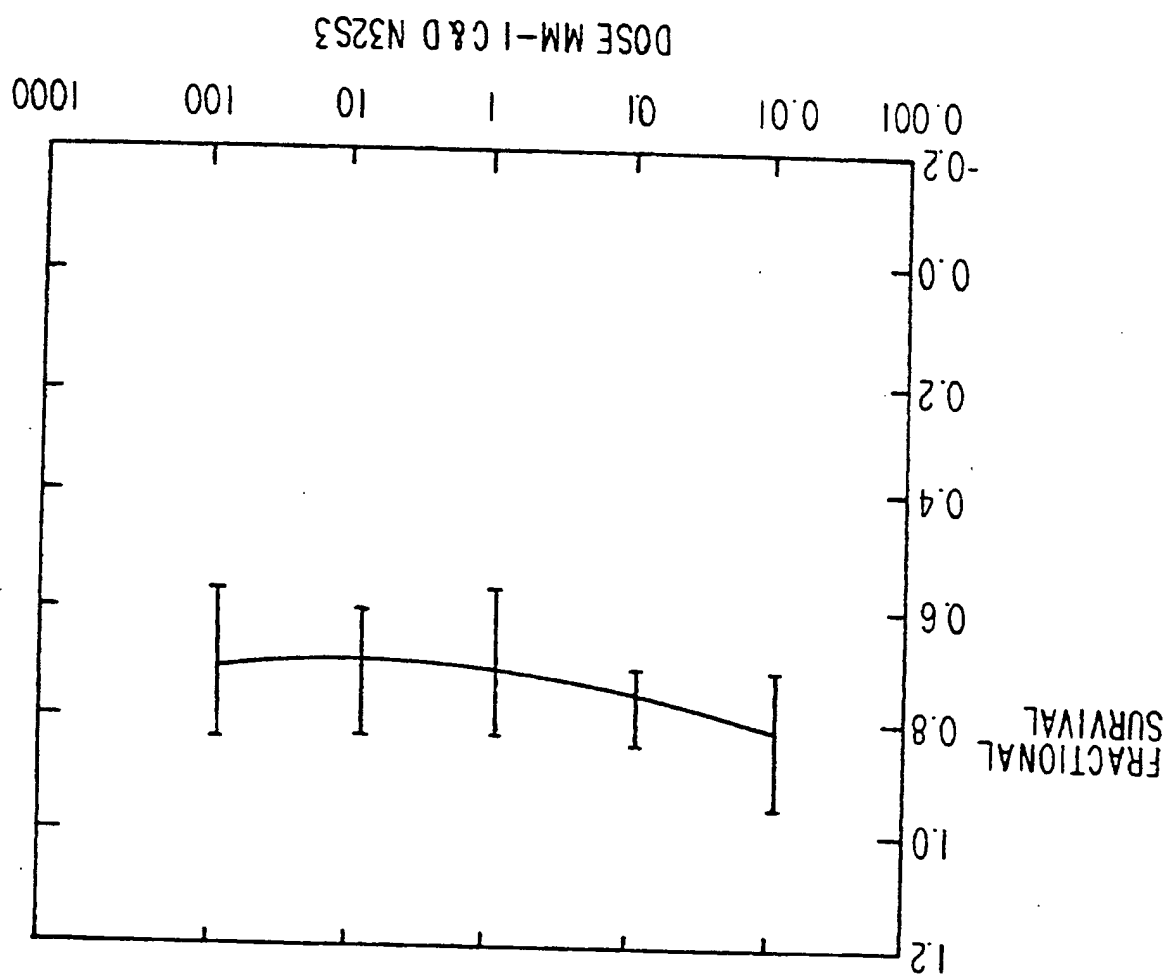


FIG. 126

FIG. 12H

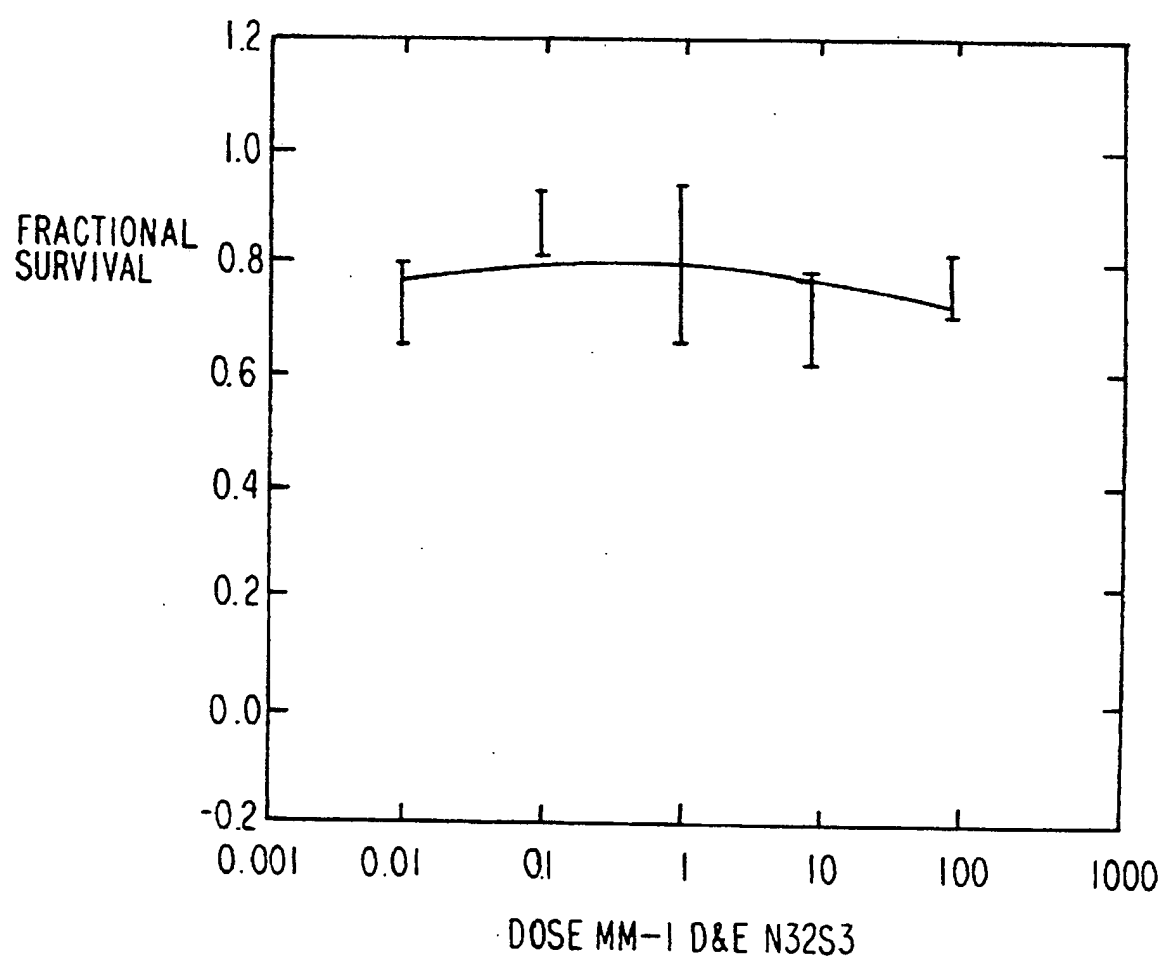


FIG. 13A

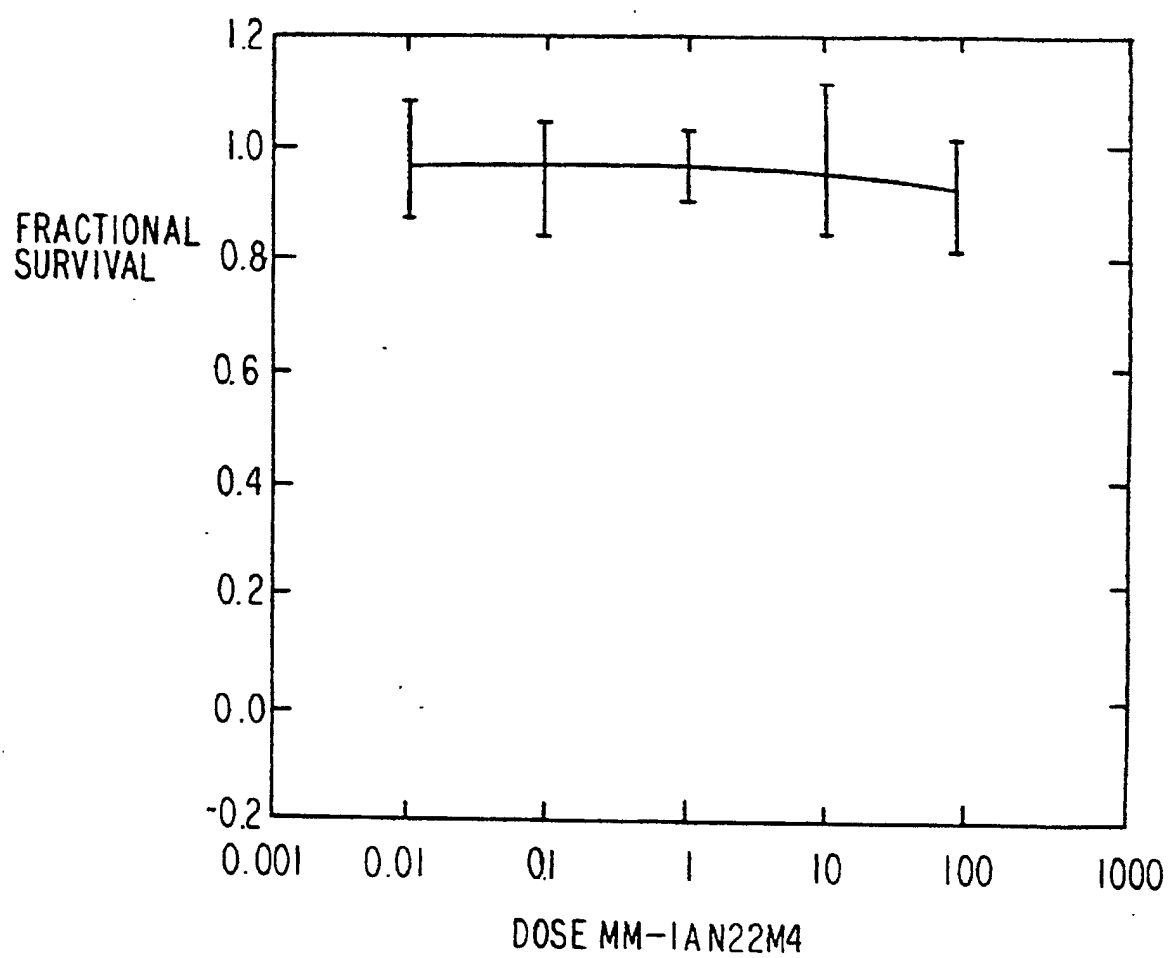


FIG. 13B

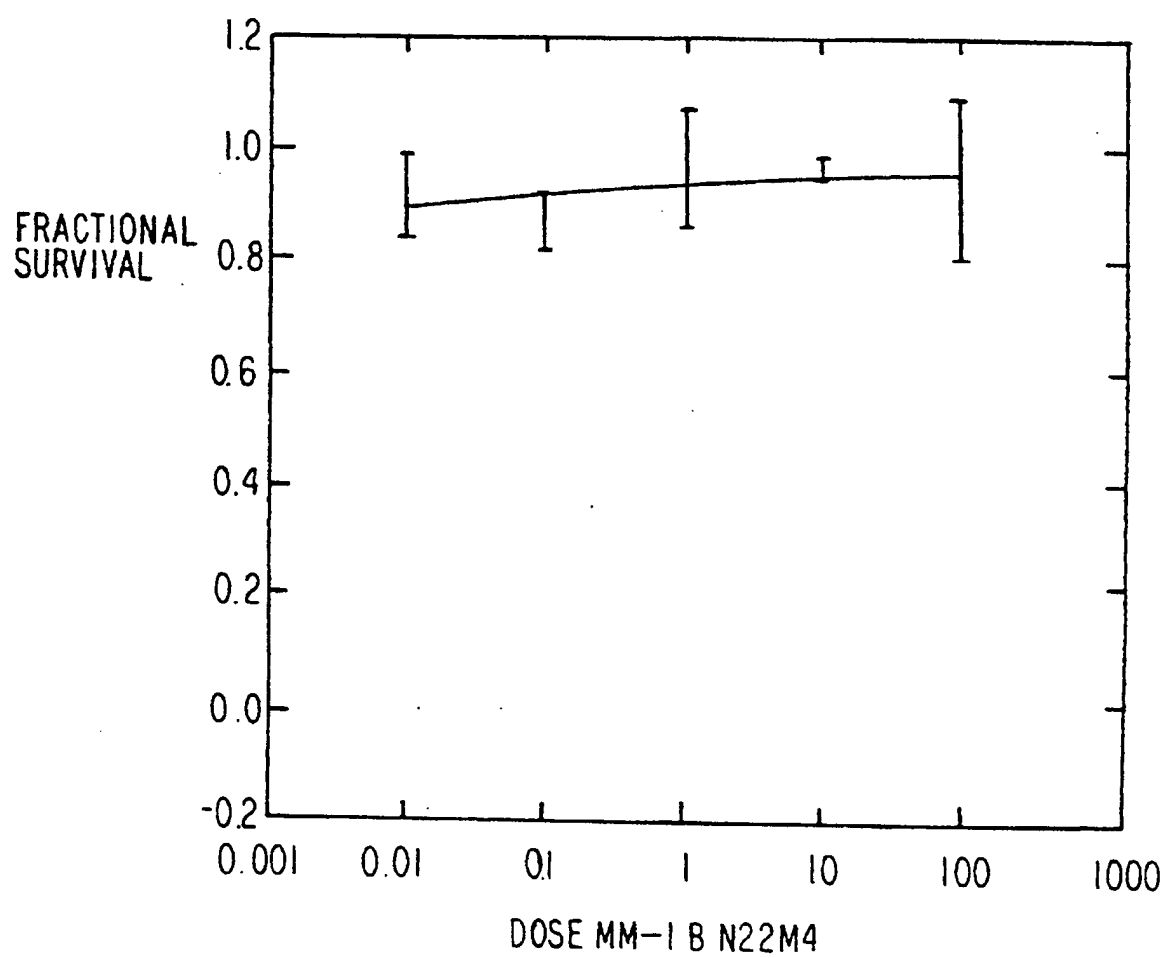


FIG. 13C

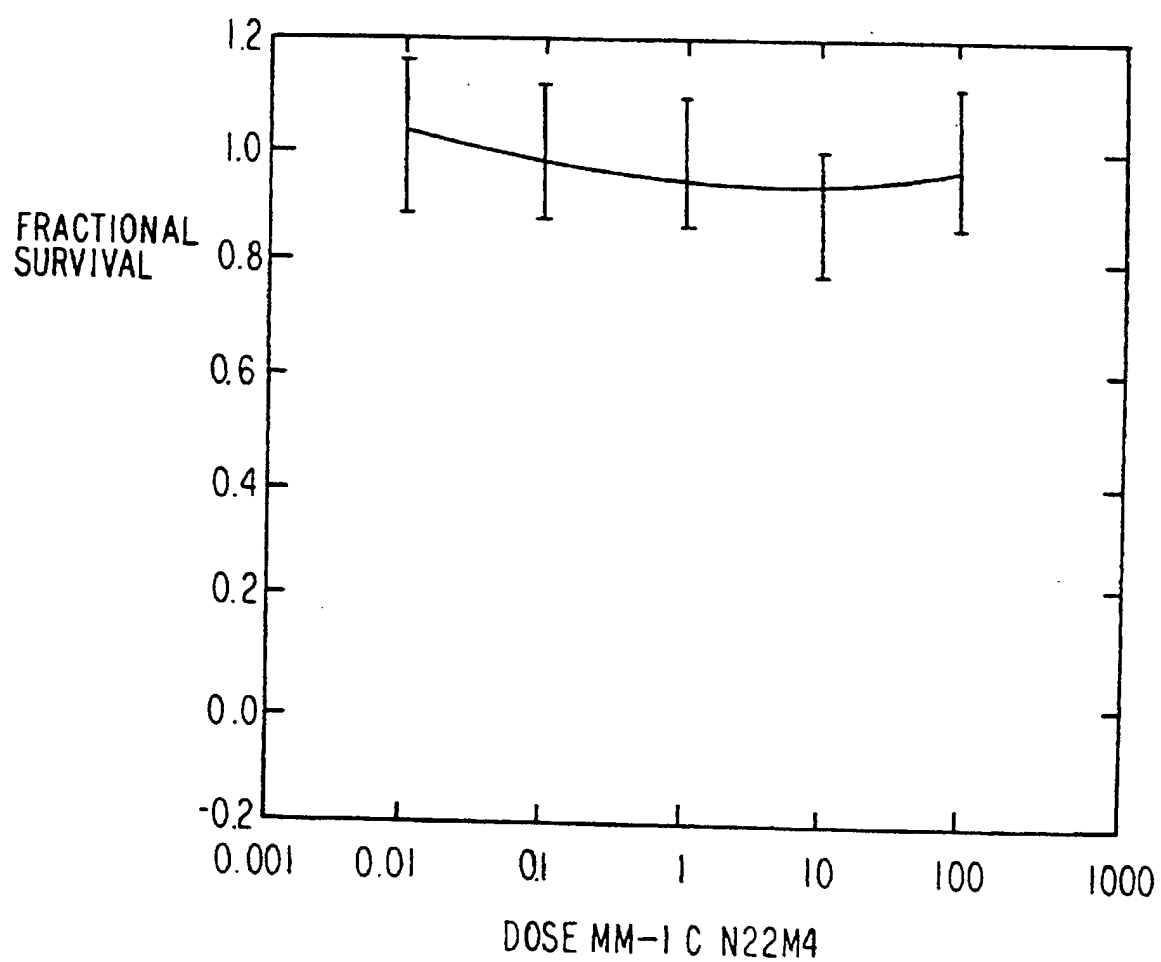


FIG. 13D

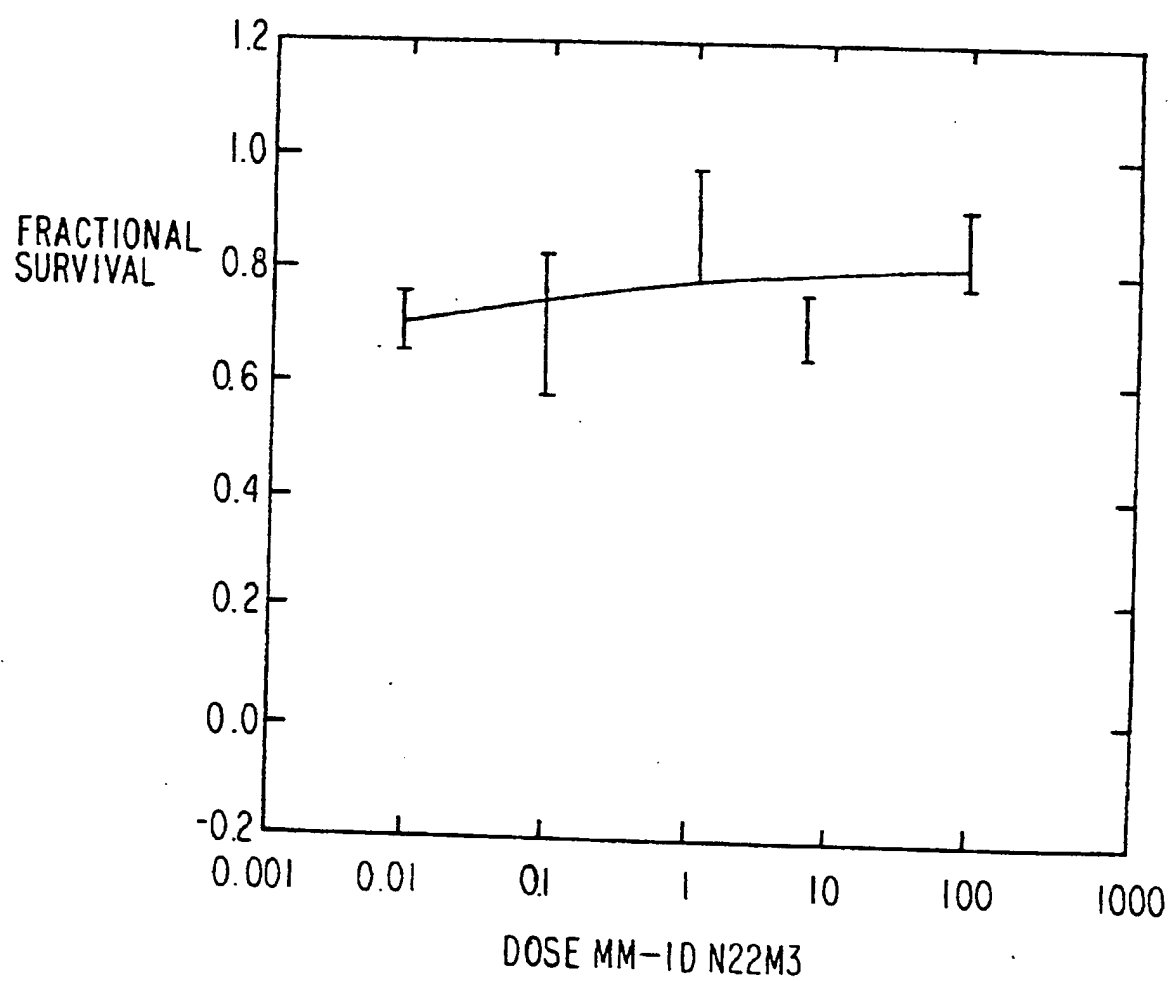


FIG. 13E

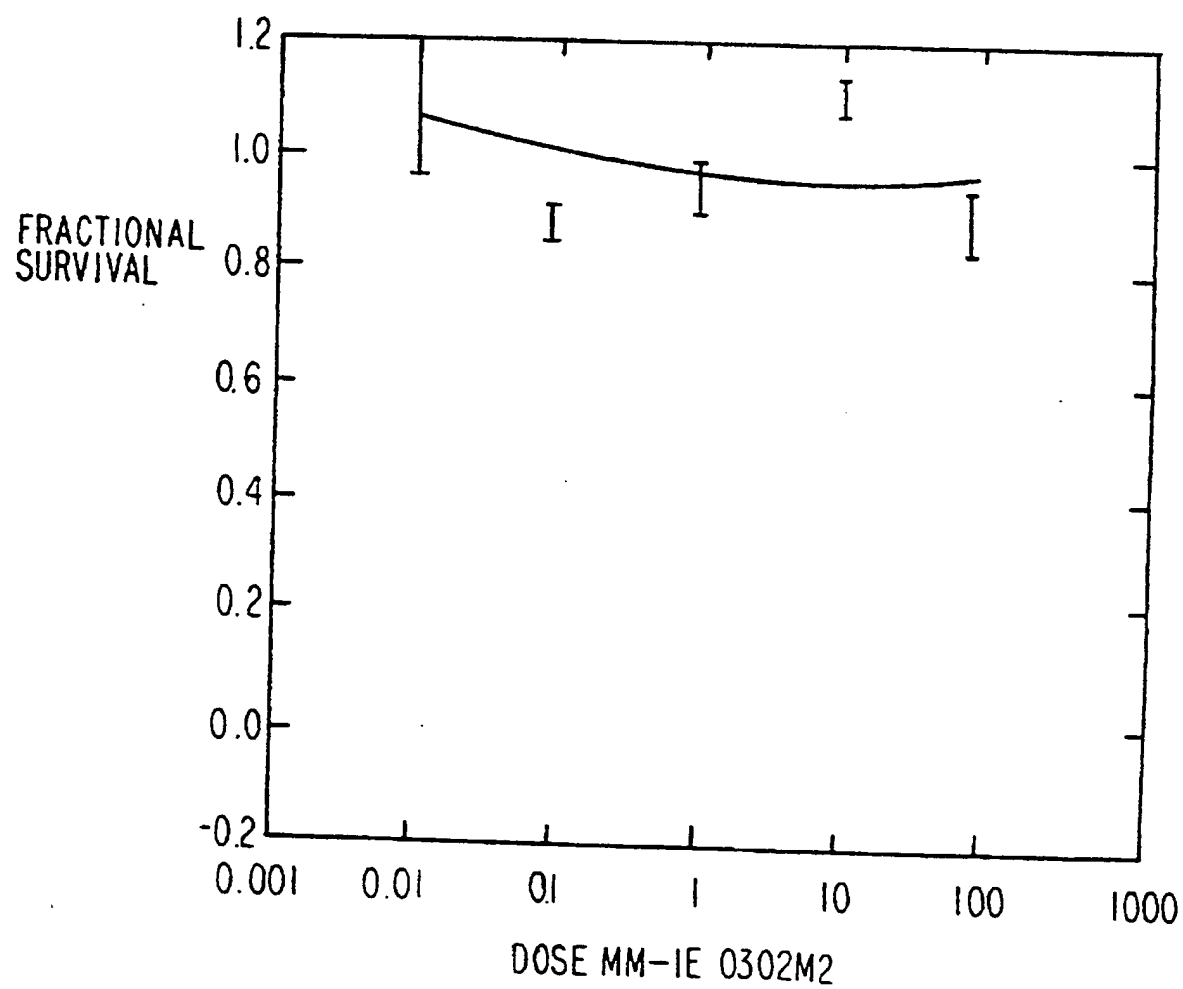


FIG. 13F

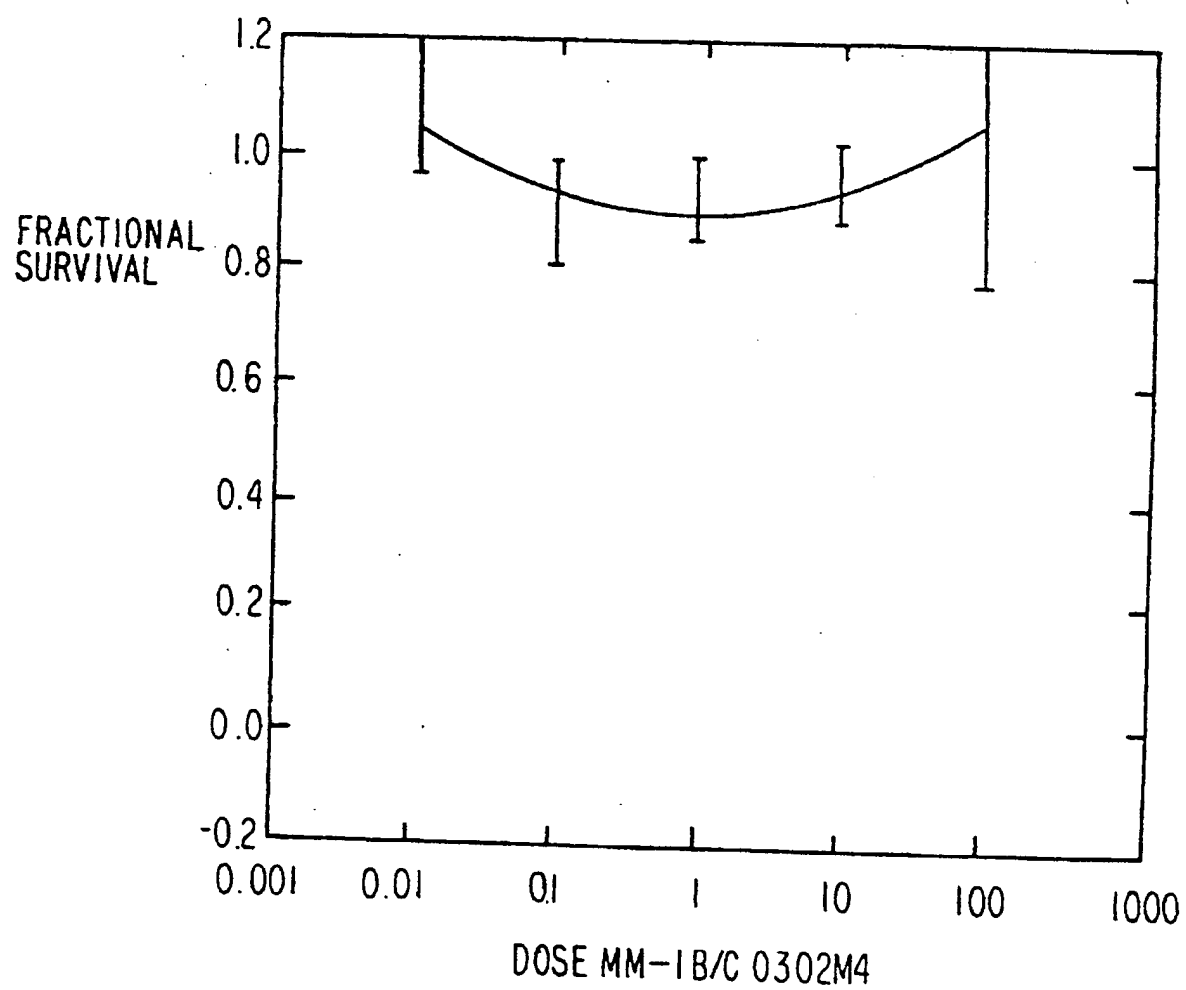


FIG. 13G

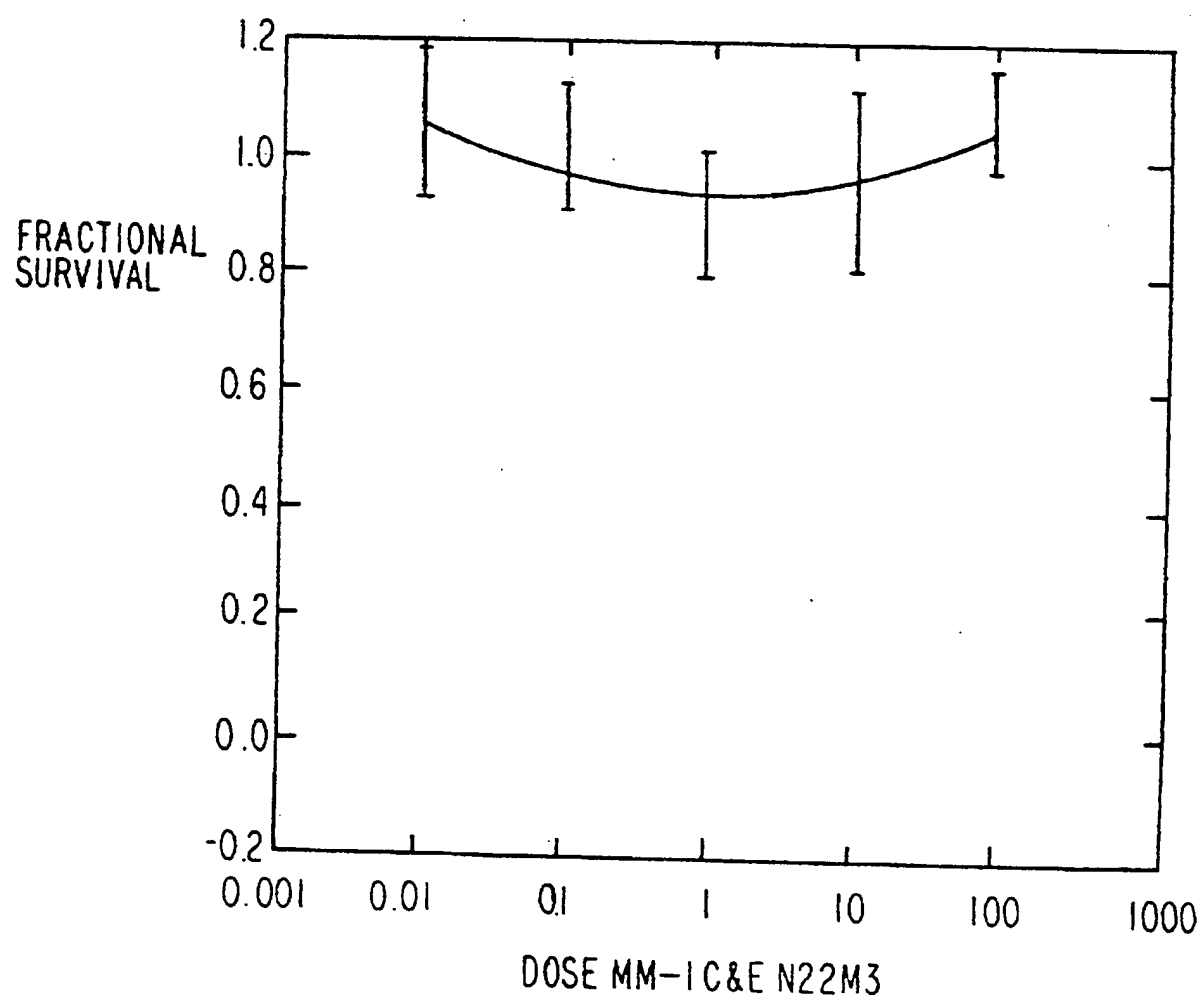


FIG. 13H

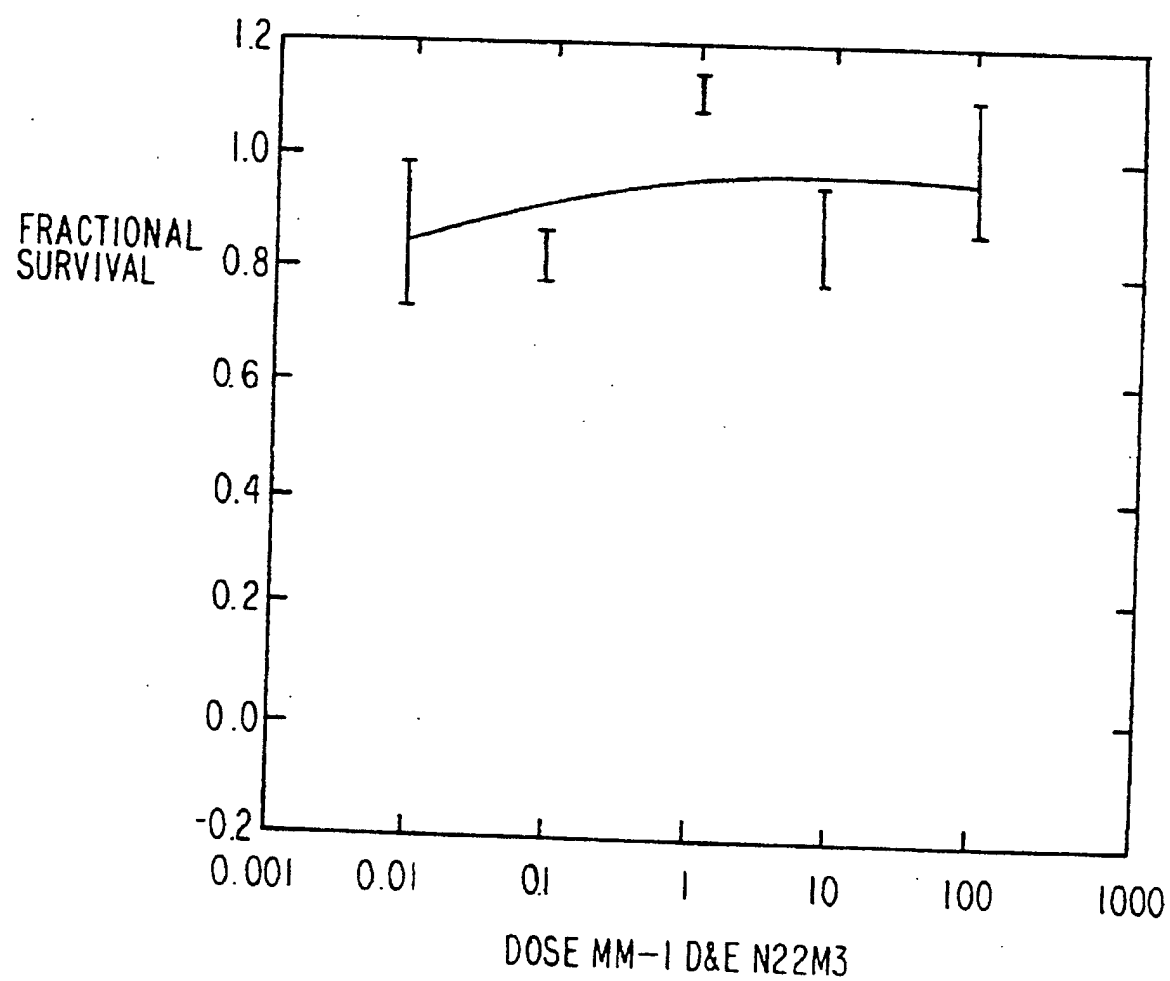


FIG. 14

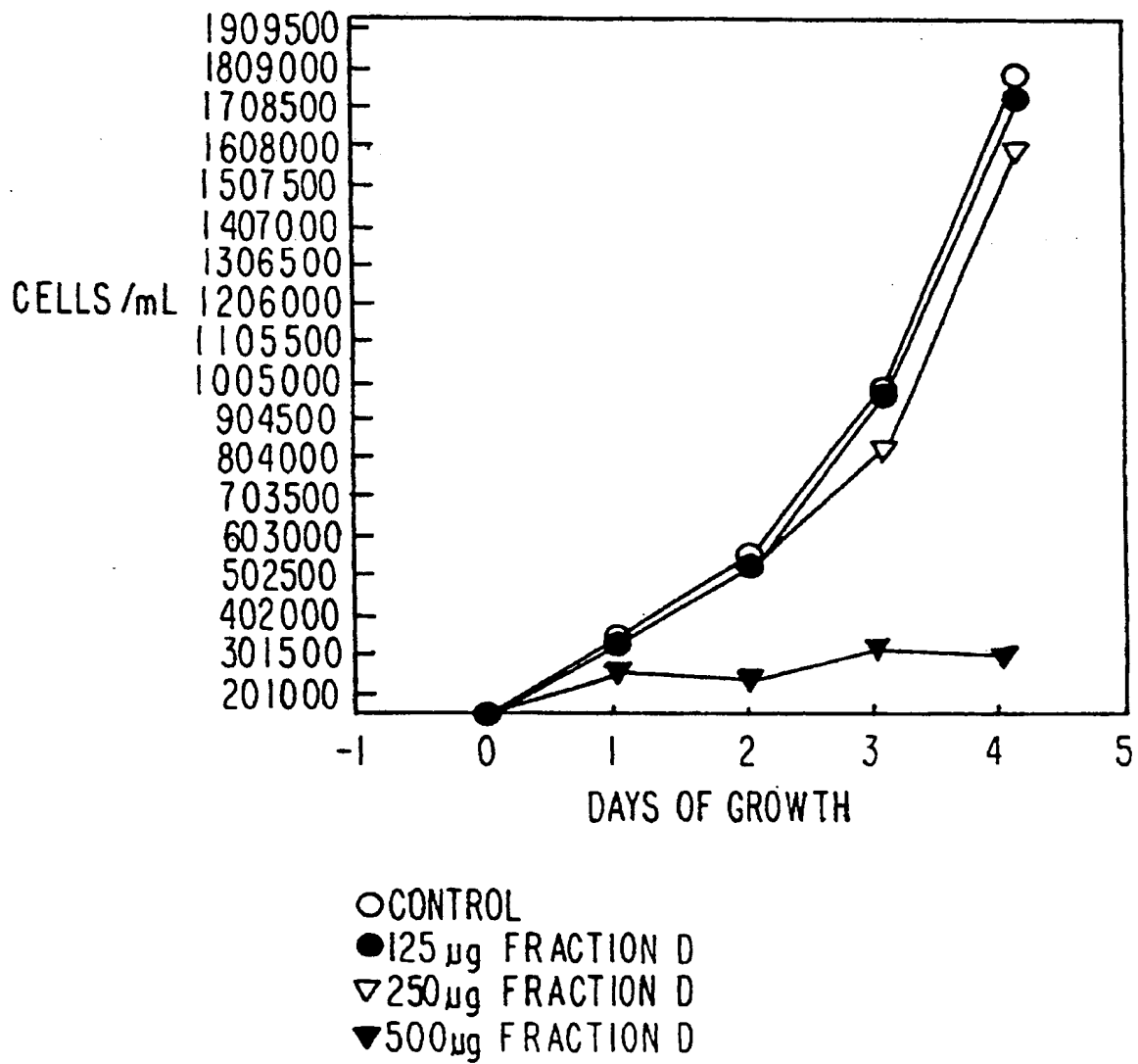
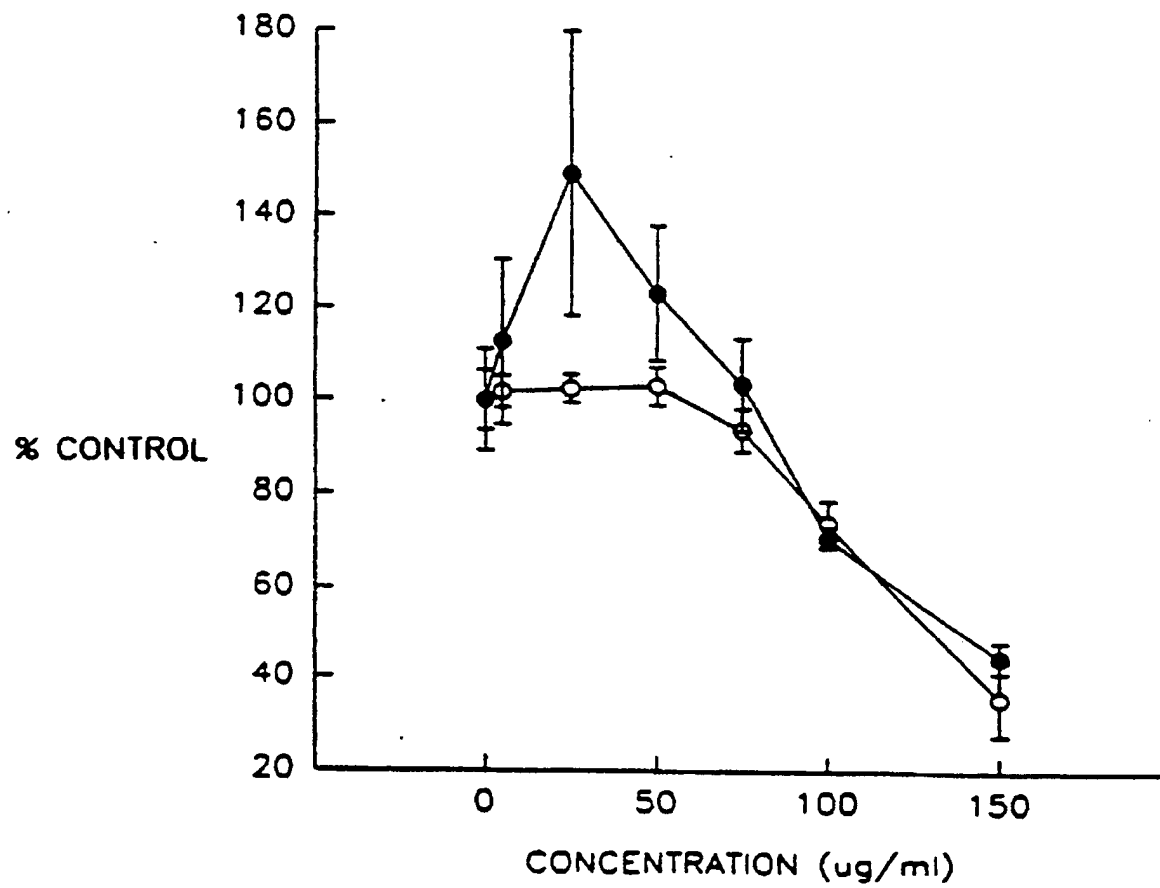
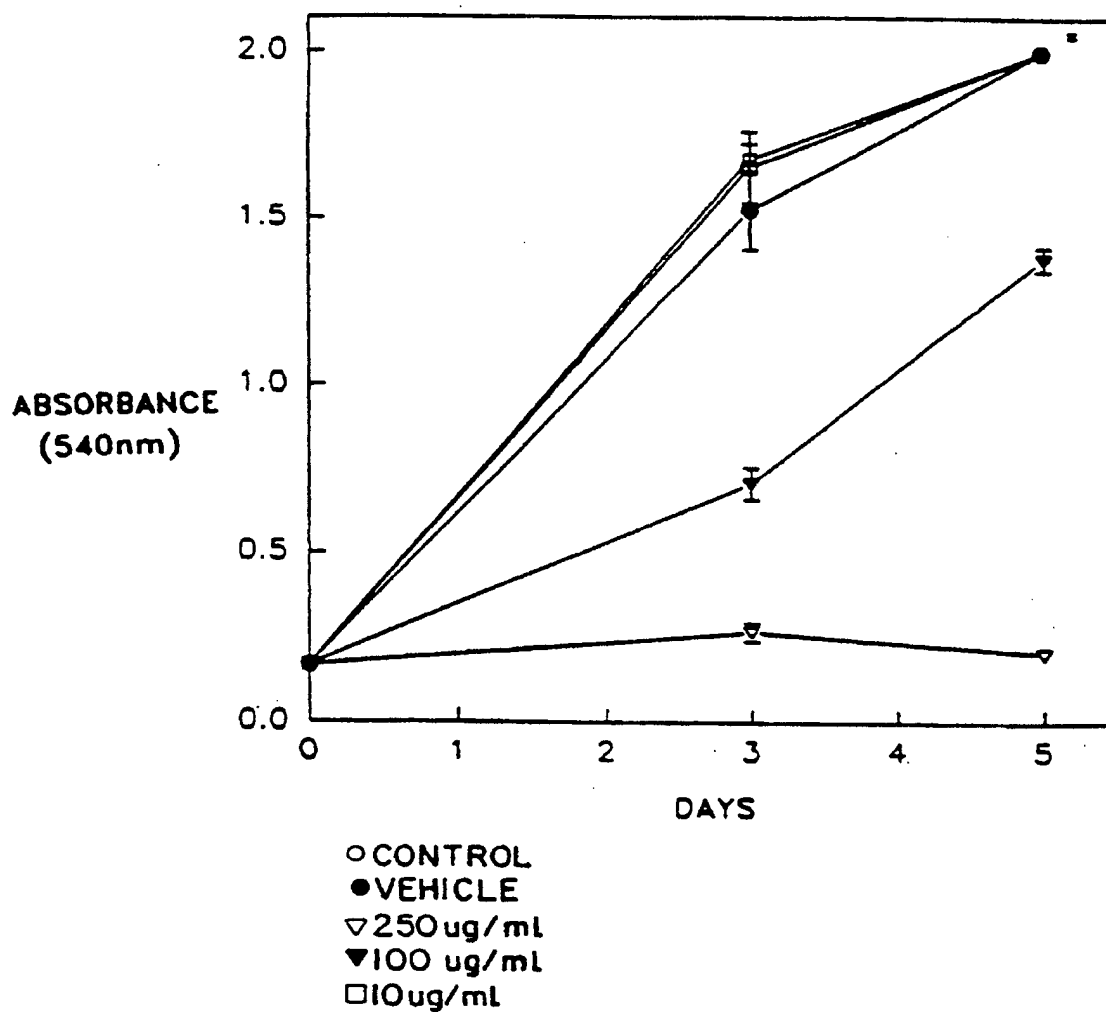


FIG. 15A



○ XTT STAINING
● CRYSTAL VIOLET STAINING

FIG. 15B



* NOTE: ABSORBANCE OF 2.0 INDICATES THE MAXIMUM ABSORBANCE OF THE PLATE READER. IT IS NOT REPRESENTATIVE OF CELL NUMBER.

FIG. 15C

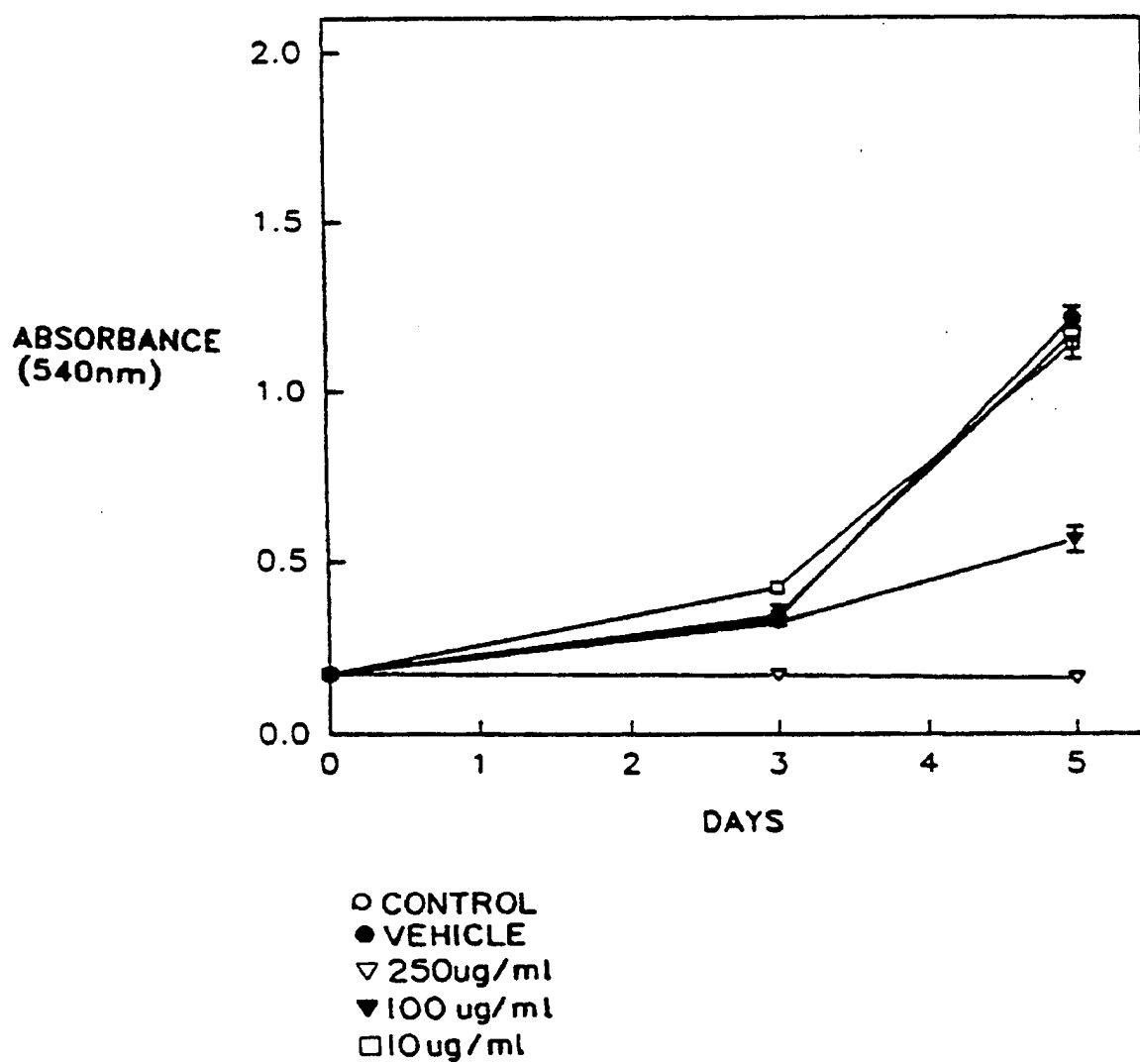
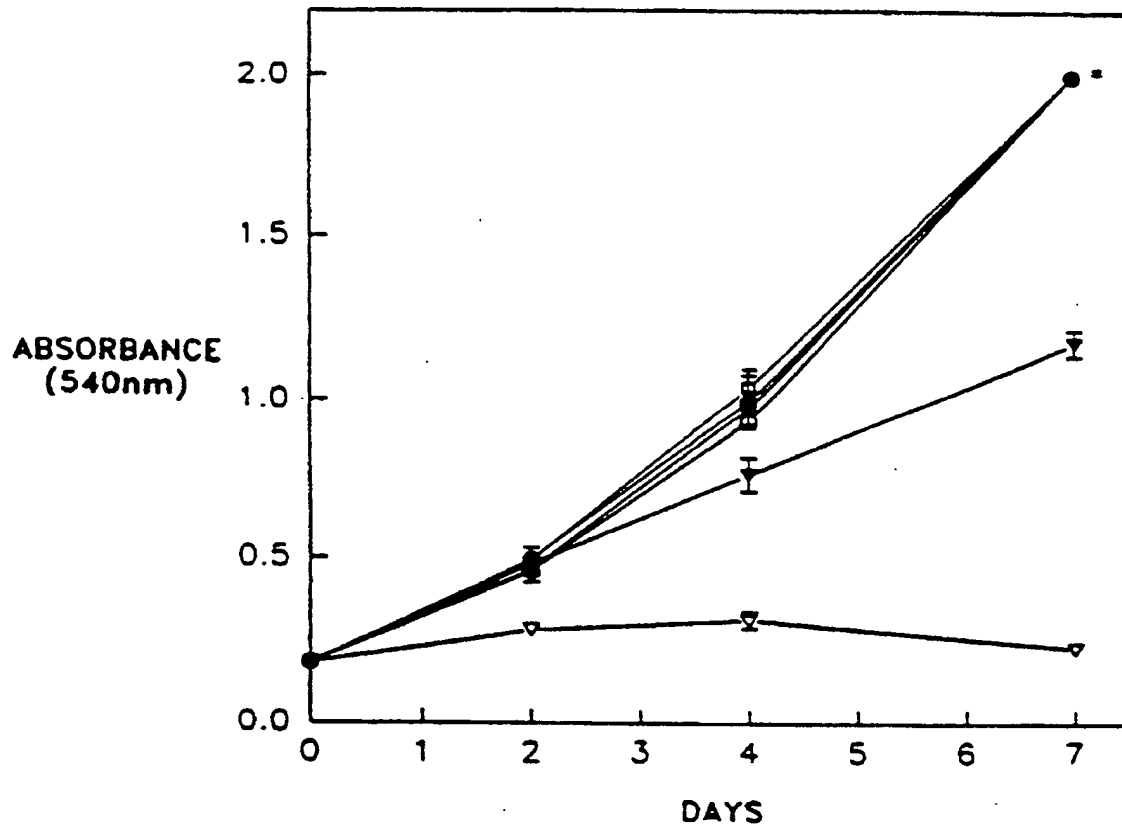


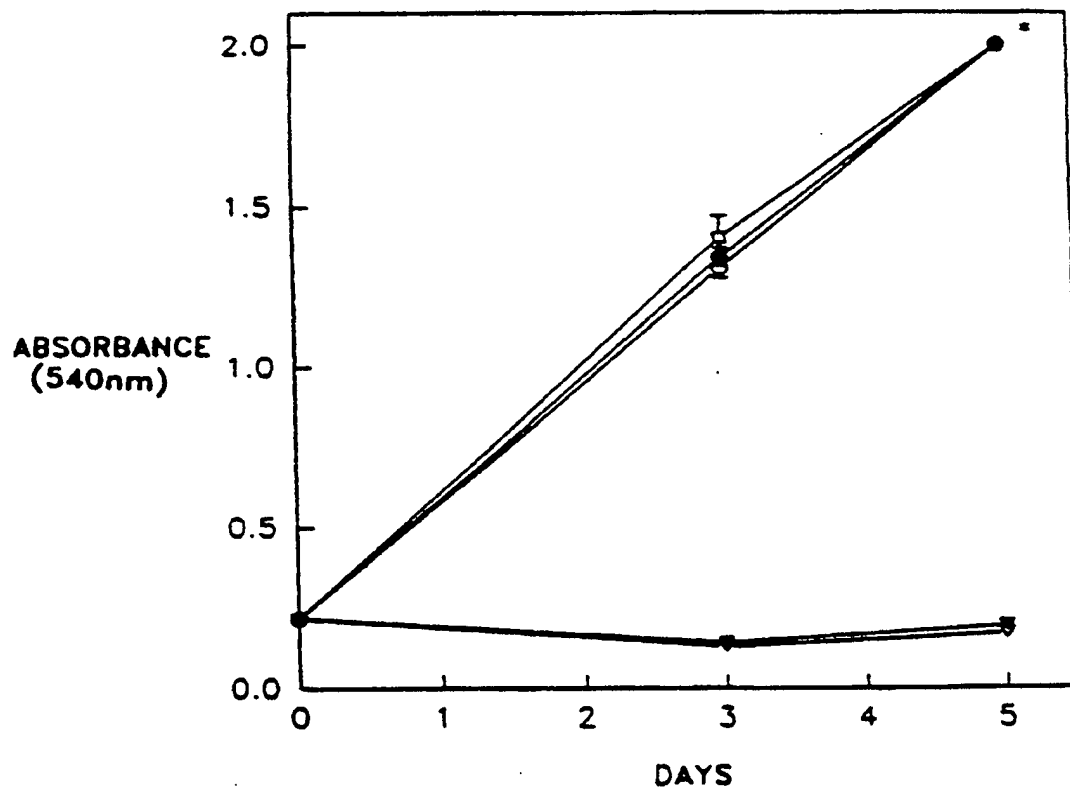
FIG. 15D



○ CONTROL
● VEHICLE CONTROL
▽ 250ug/ml
▼ 100ug/ml
□ 10ug/ml
■ 1ug/ml

*NOTE: ABSORBANCE OF 2.0 INDICATES THE MAXIMUM ABSORBANCE OF THE PLATE READER. IT IS NOT REPRESENTATIVE OF CELL NUMBER.

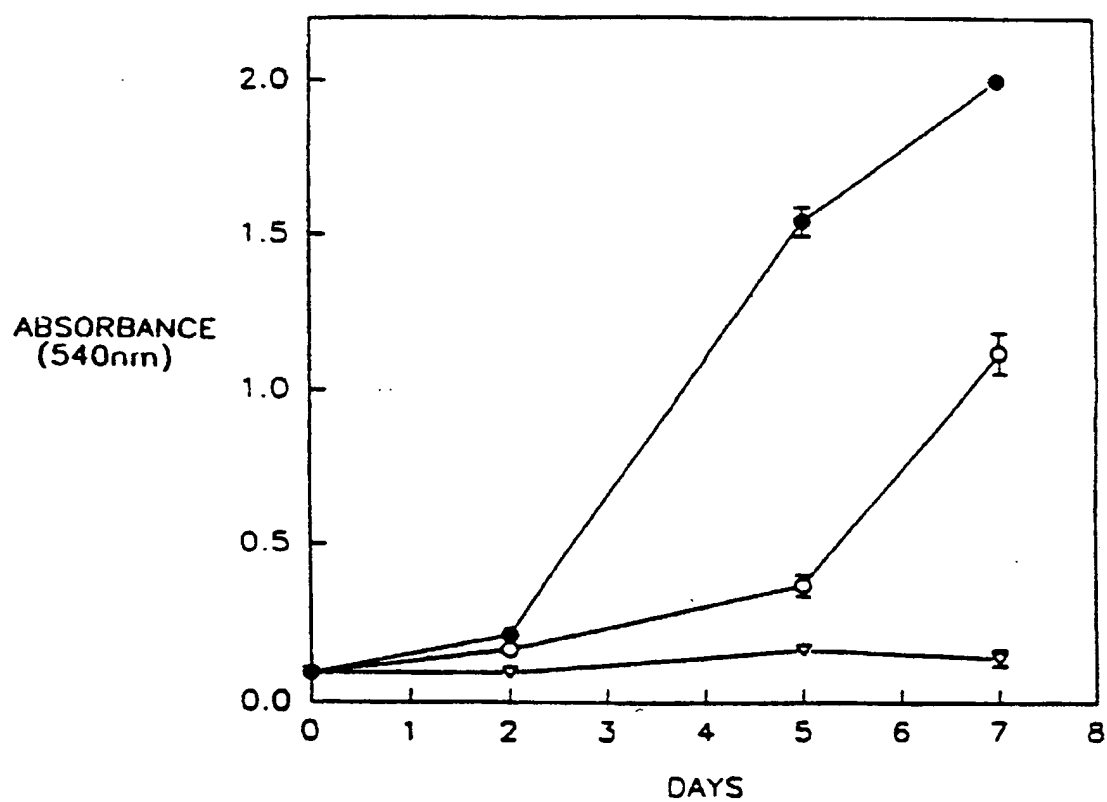
FIG. 15E



○ CONTROL
● VEHICLE
▽ 250 ug/ml
▼ 100 ug/ml
□ 10 ug/ml

* NOTE: ABSORBANCE OF 2.0 INDICATES THE MAXIMUM ABSORBANCE OF THE PLATE READER. IT IS NOT REPRESENTATIVE OF CELL NUMBER.

FIG. 15F



○ 100ug/ml FRACTIONS A-E (#64)

● 100ug/ml FRACTIONS A-C (#65)

▽ 100ug/ml FRACTIONS DBE (#66)

*NOTE: ABSORBANCE OF 2.0 INDICATES THE MAXIMUM
ABSORBANCE OF THE PLATE READER. IT IS NOT
REPRESENTATIVE OF CELL NUMBER.

FIG. 15G

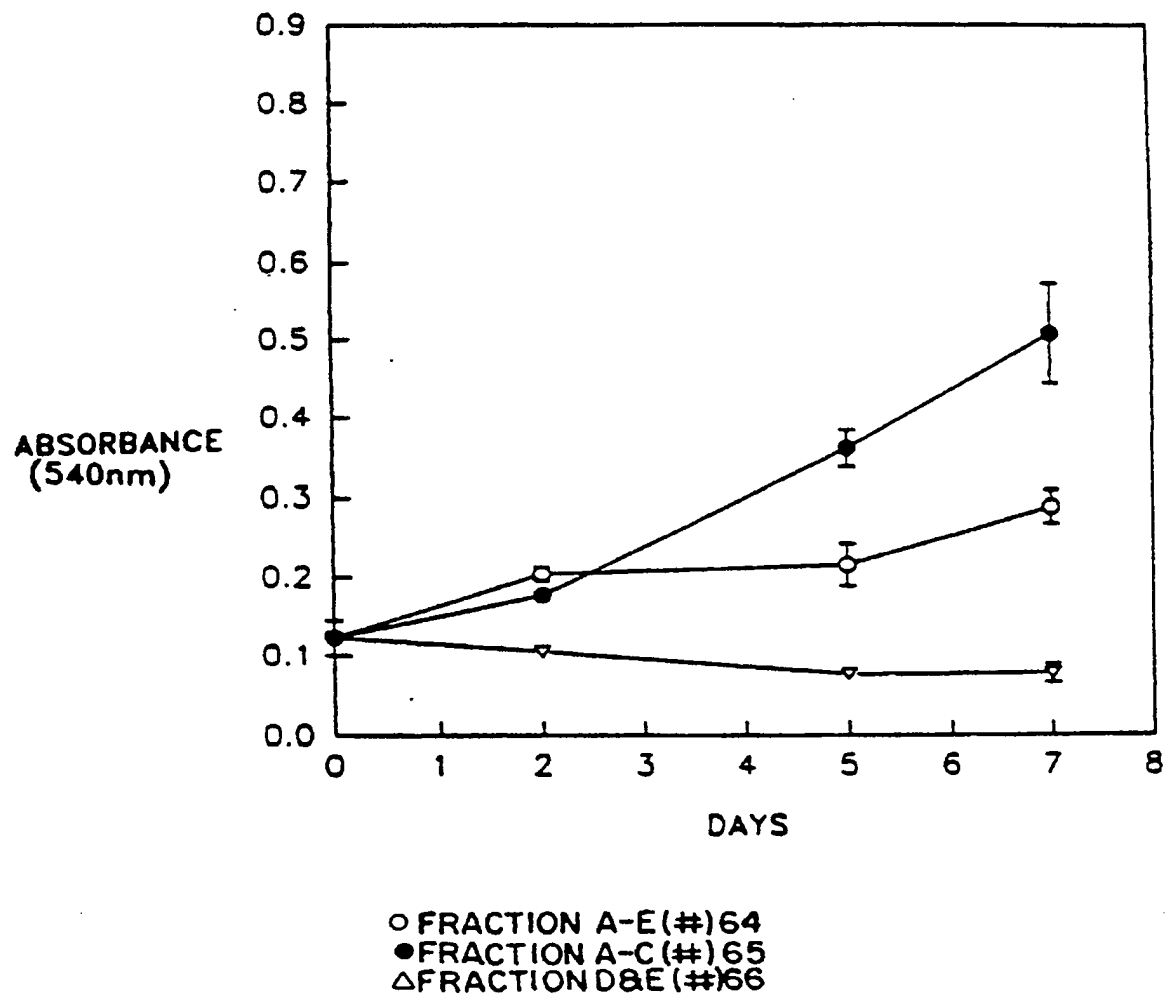
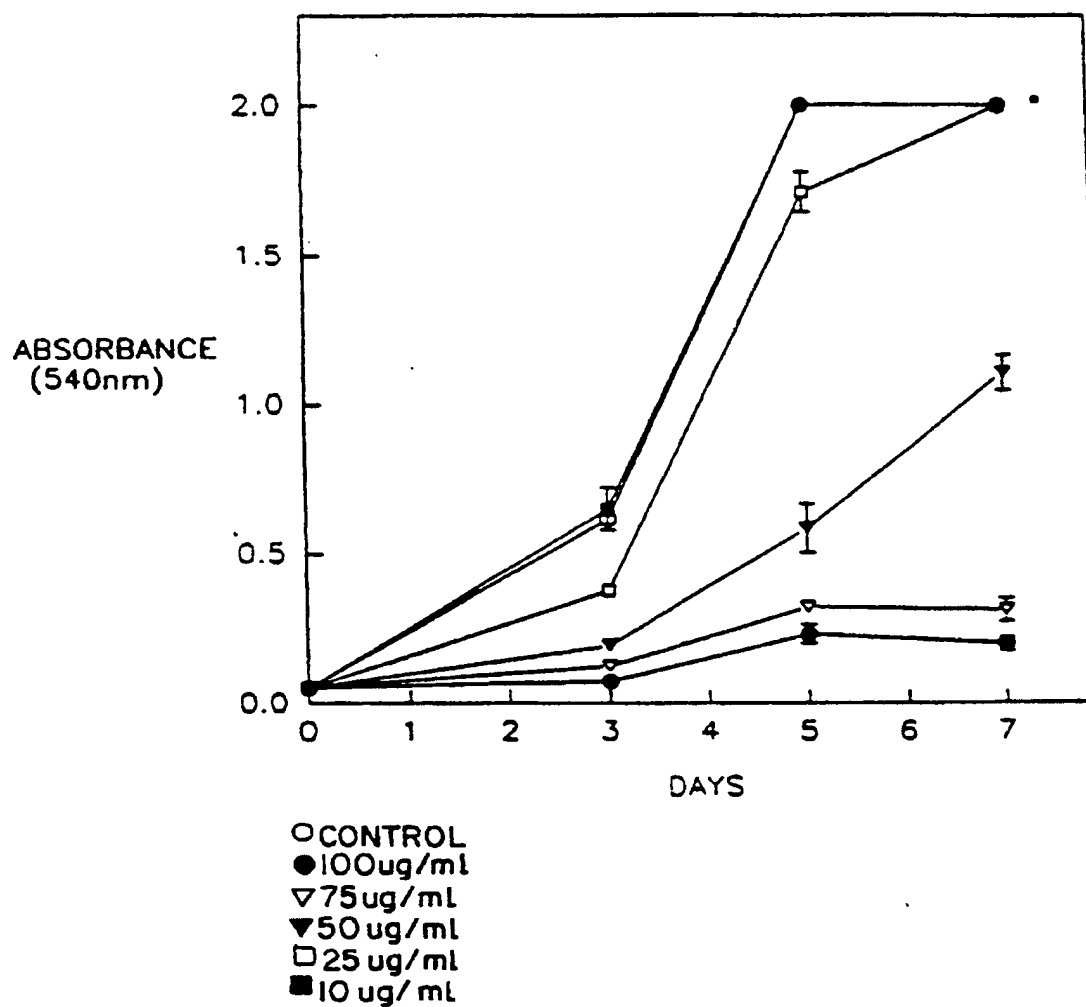


FIG. 15H



*NOTE: ABSORBANCE OF 2.0 INDICATES THE MAXIMUM ABSORBANCE OF THE PLATE READER. IT IS NOT REPRESENTATIVE OF CELL NUMBER.

FIG. 15I

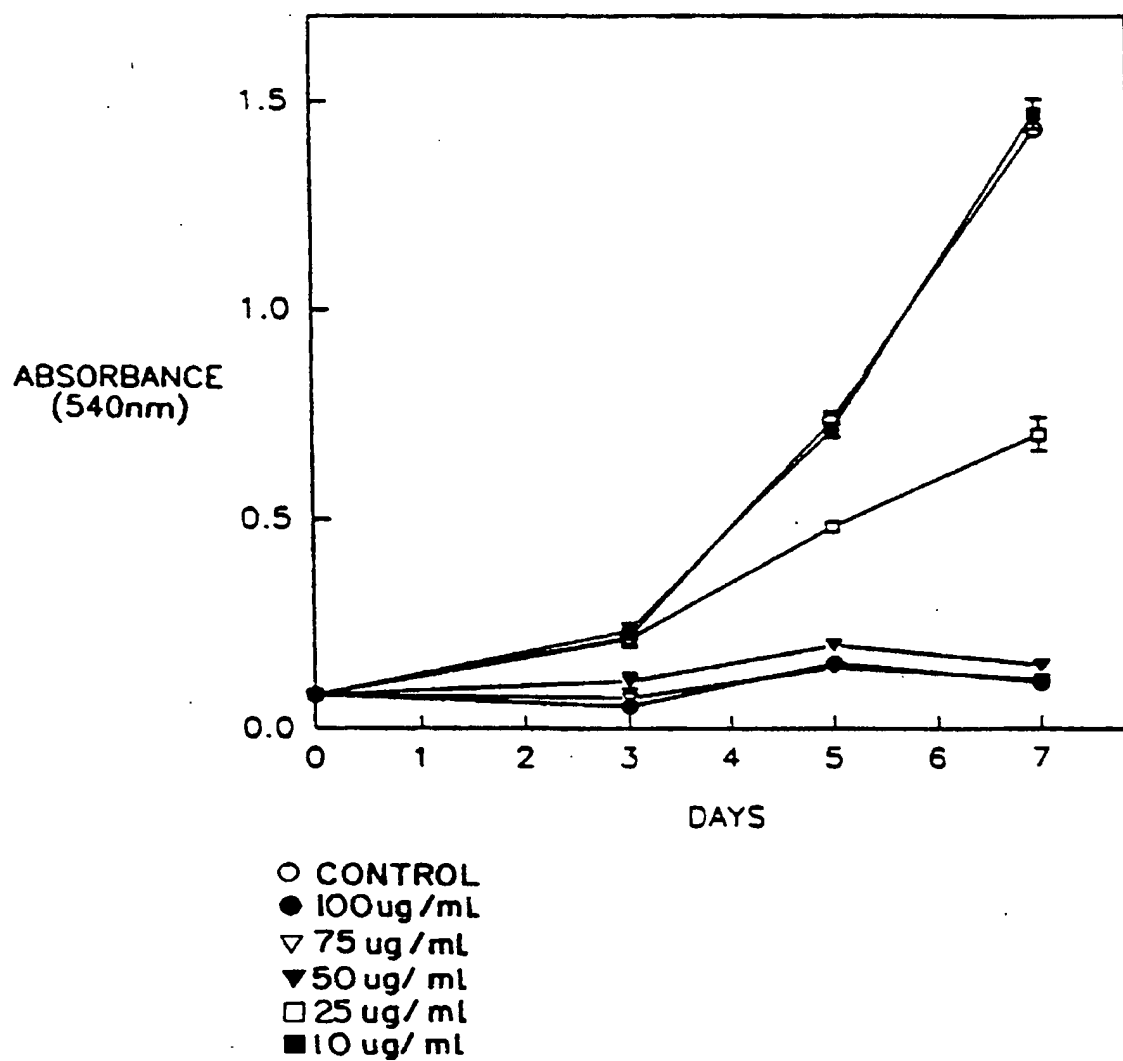
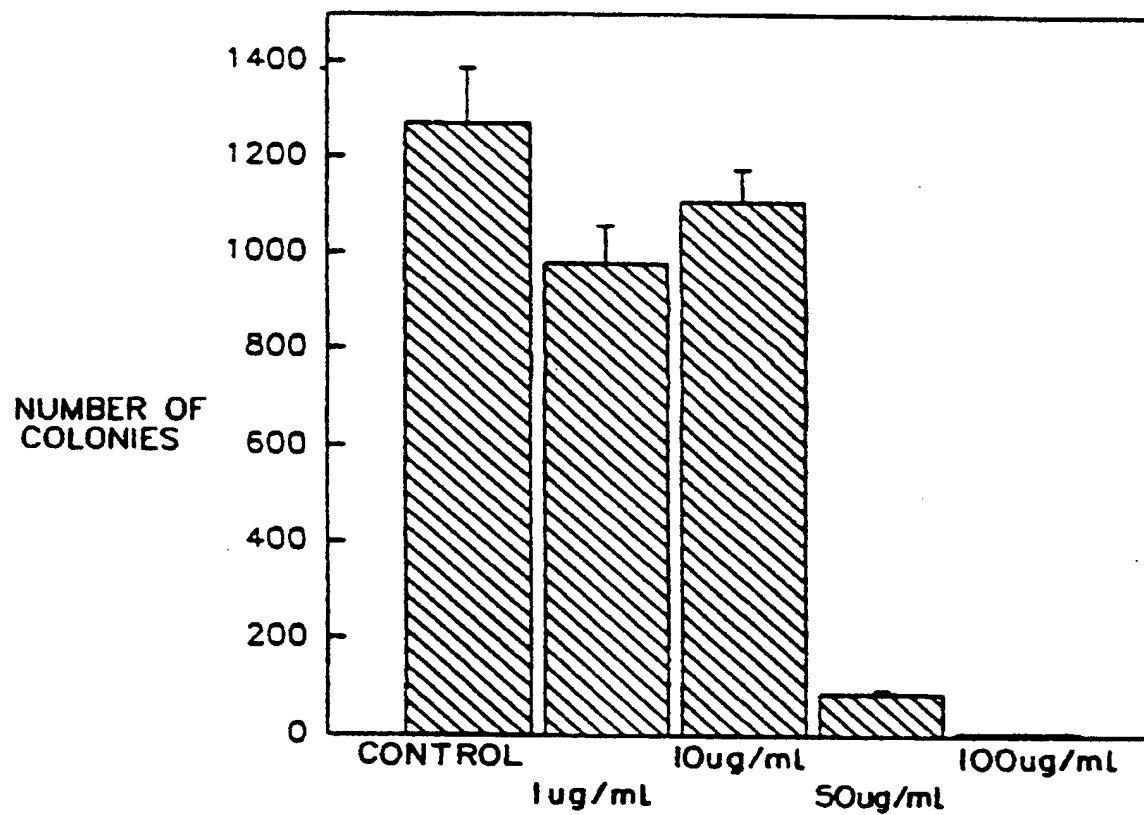


FIG.15J



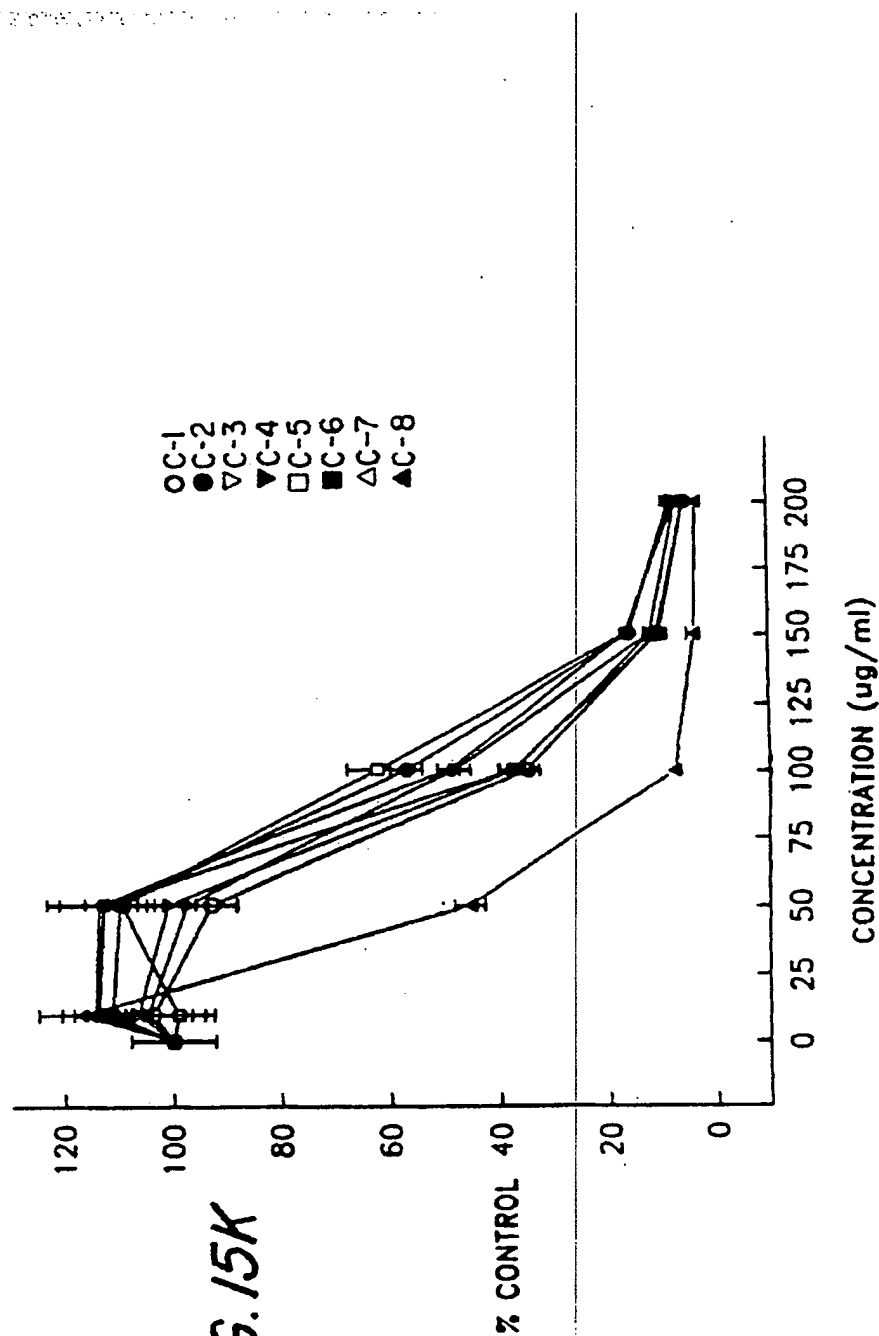


FIG. 15K

# GENOTYPE	HORTI. RACE	DESCRIPTION
C-1 UF-12	CRILLLO	CRUDE EXTRACTS OF UF-12(BRAZIL) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)
C-2 NA-33	FORASTERO	CRUDE EXTRACTS OF NA-33(BRAZIL) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)
C-3 EEG-48	FORASTERO	CRUDE EXTRACTS OF EEG-48(BRAZIL) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)
C-4 UNKNOWN	FORASTERO	CRUDE EXTRACTS OF UNKNOWN (W. AFRICA) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)
C-5 UF-63	TRINITARIO	CRUDE EXTRACTS OF UF-63(BRAZIL) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)
C-6 ICS-100	TRINITARIO	CRUDE EXTRACTS OF ICS-10(BRAZIL) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)
C-7 ICS-139	TRINITARIO	CRUDE EXTRACTS OF ICS-139(BRAZIL) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)
C-8 UIT-1	TRINITARIO	CRUDE EXTRACTS OF UIT-1(MALAYSIA) COCOA POLYPHENOLS (DECAFFEINATED/ DETHEOBROMINATED)

FIG. 15L

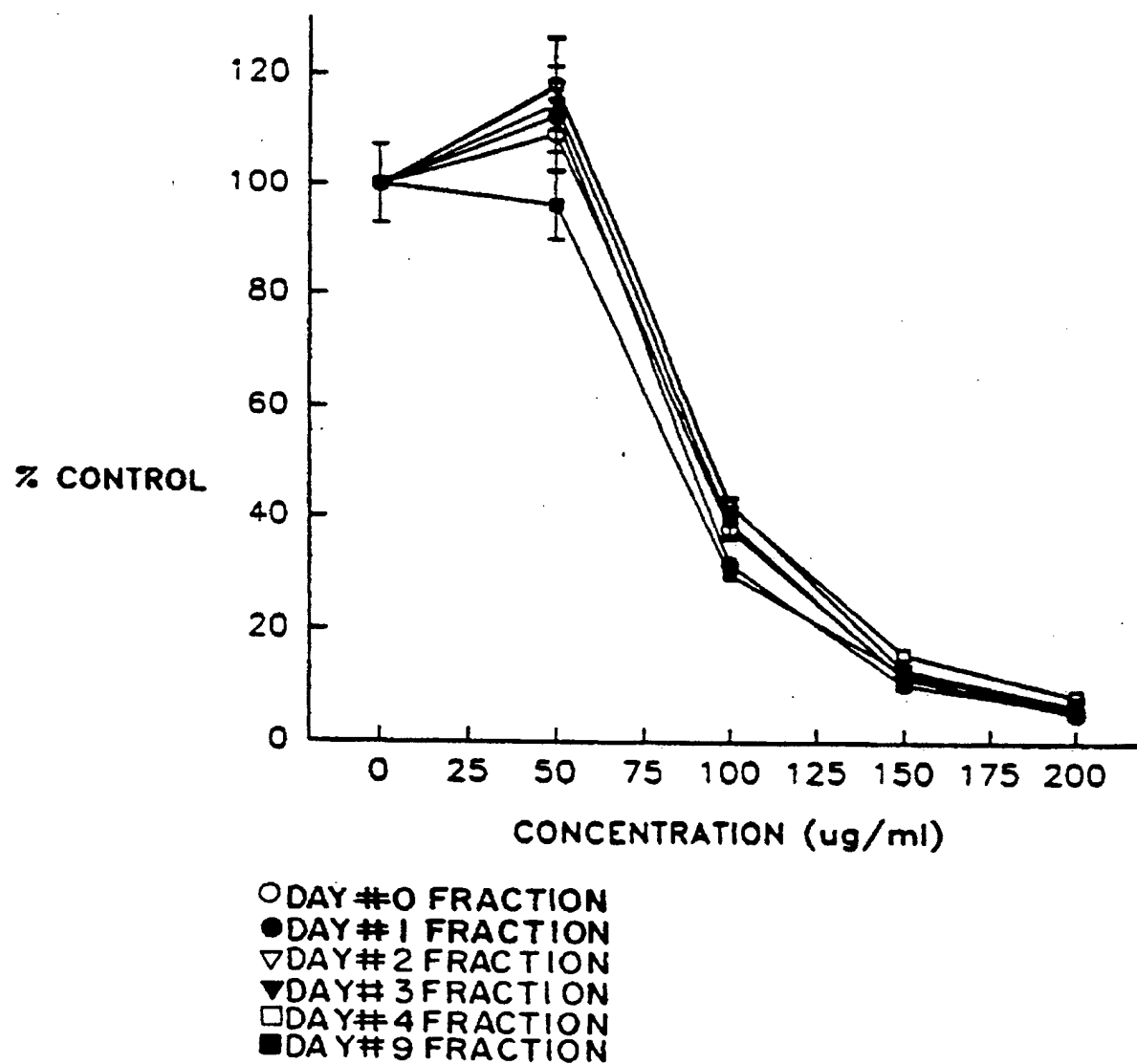


FIG. 15M

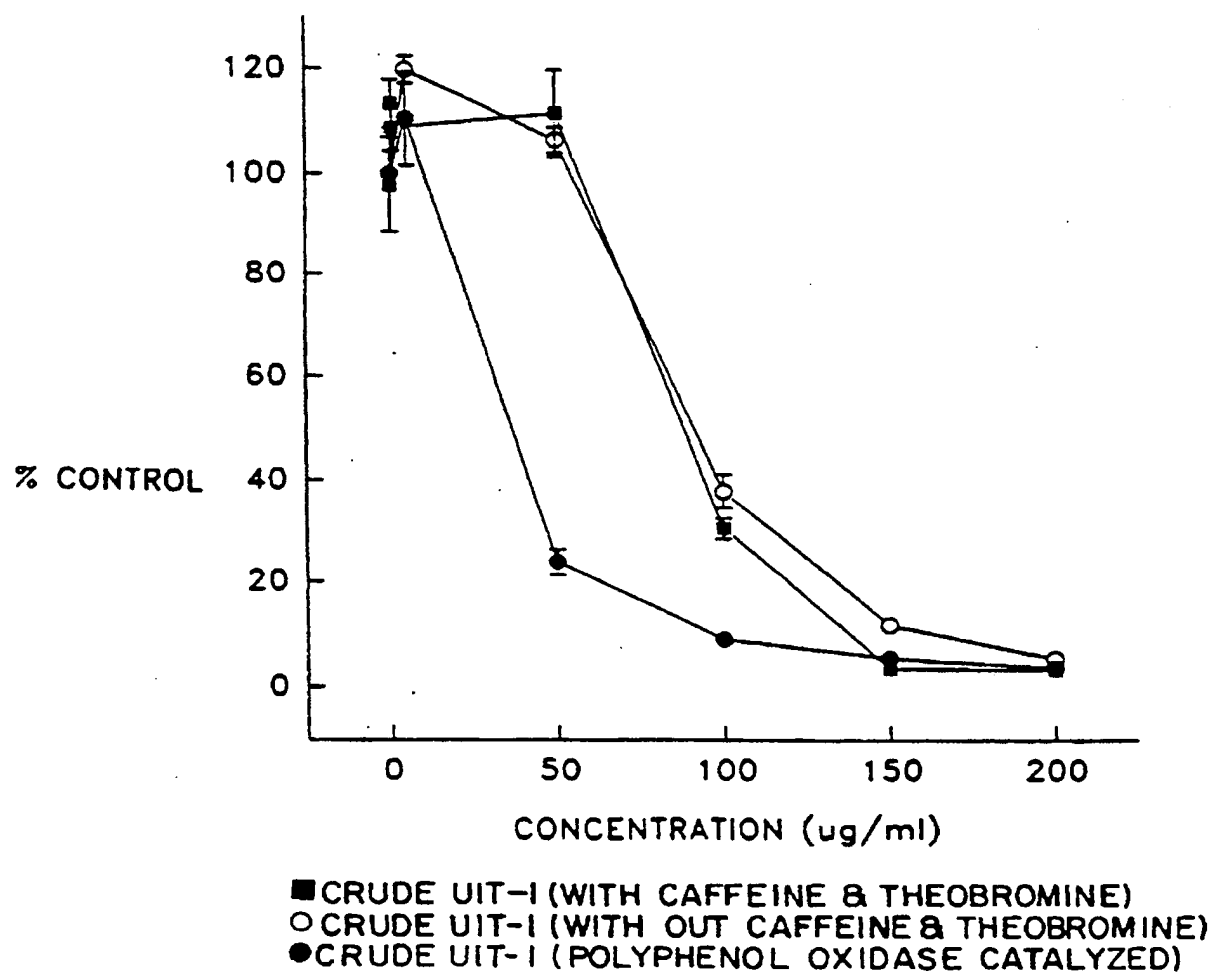


FIG. 15N

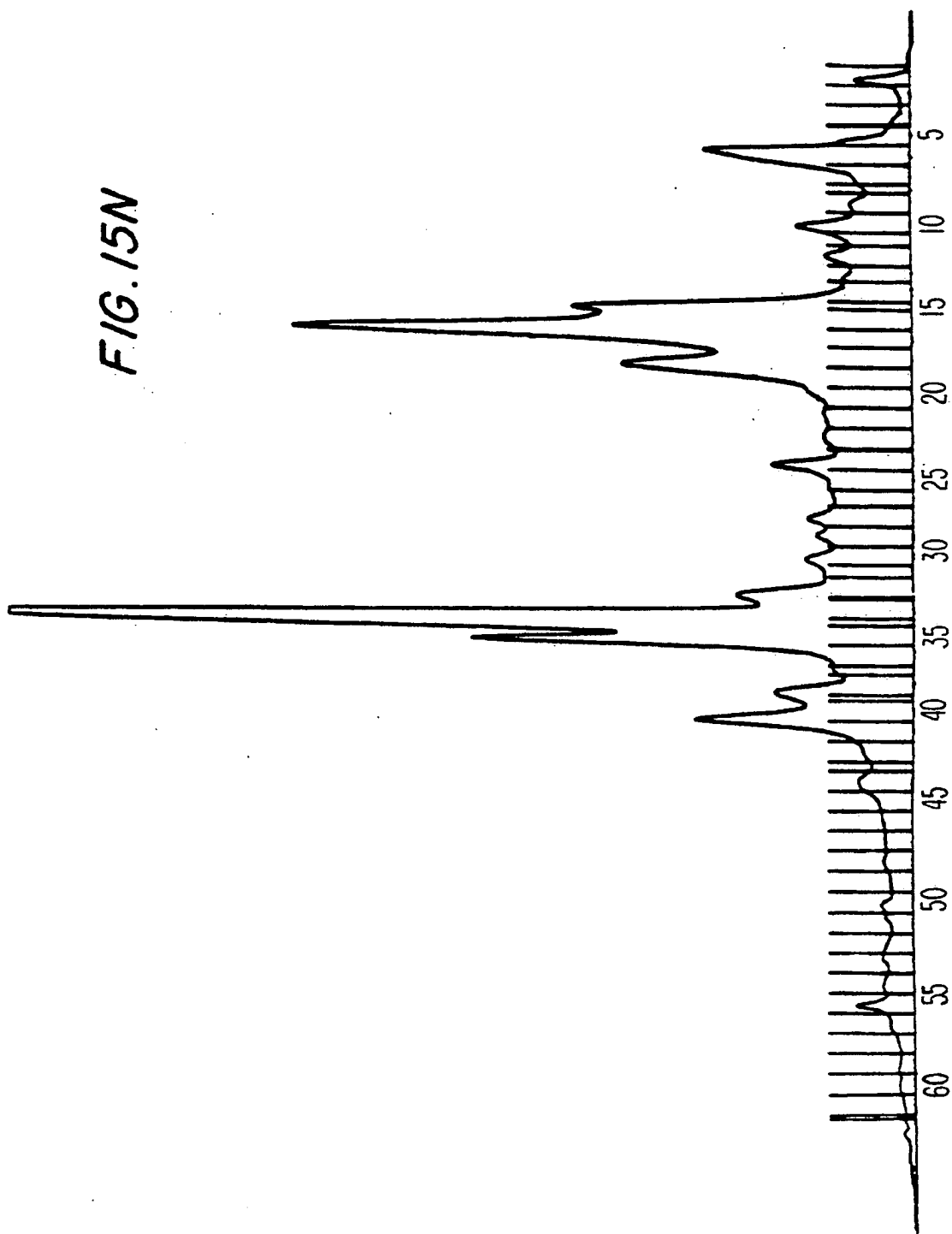


FIG. 150

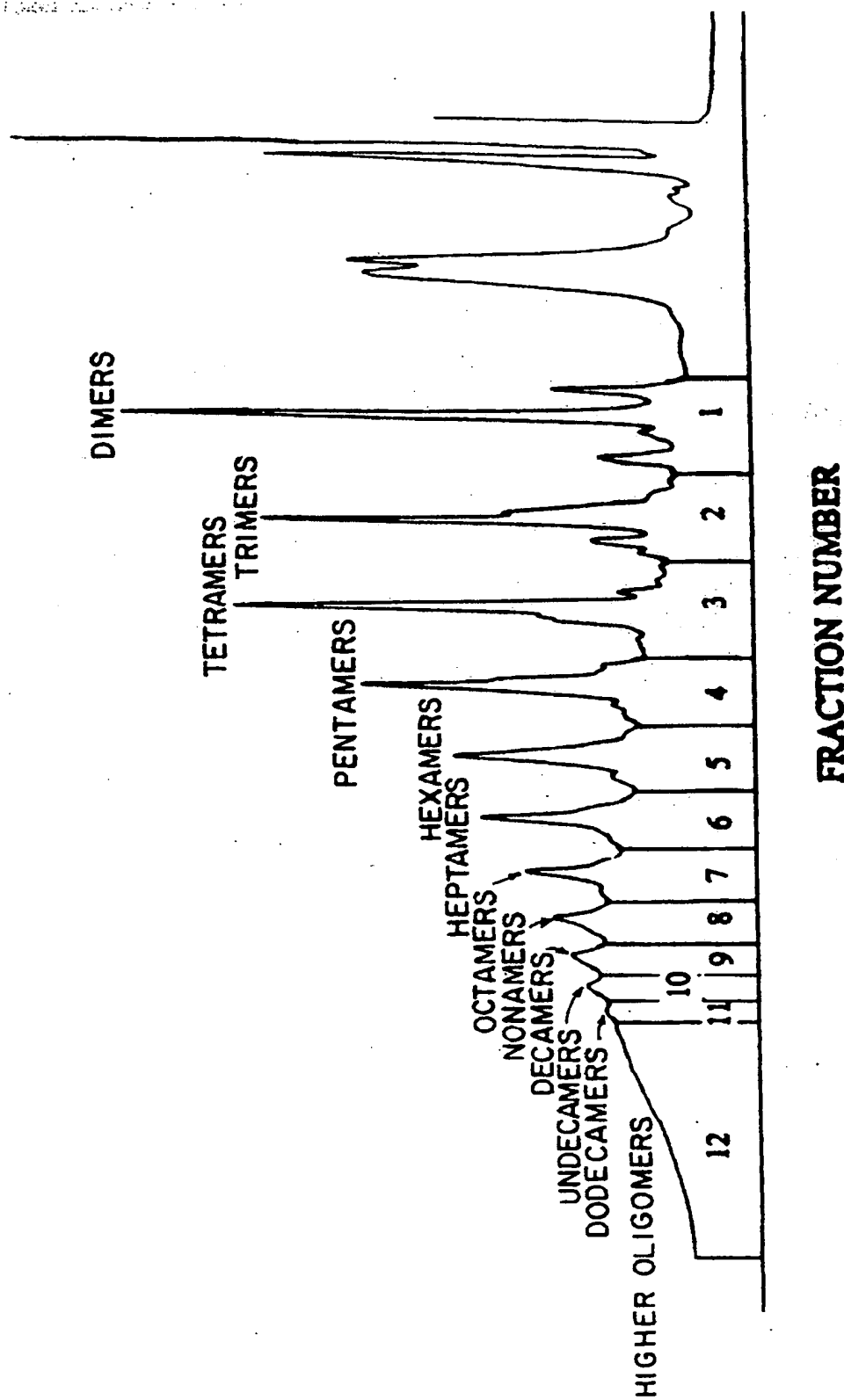


FIG. 16

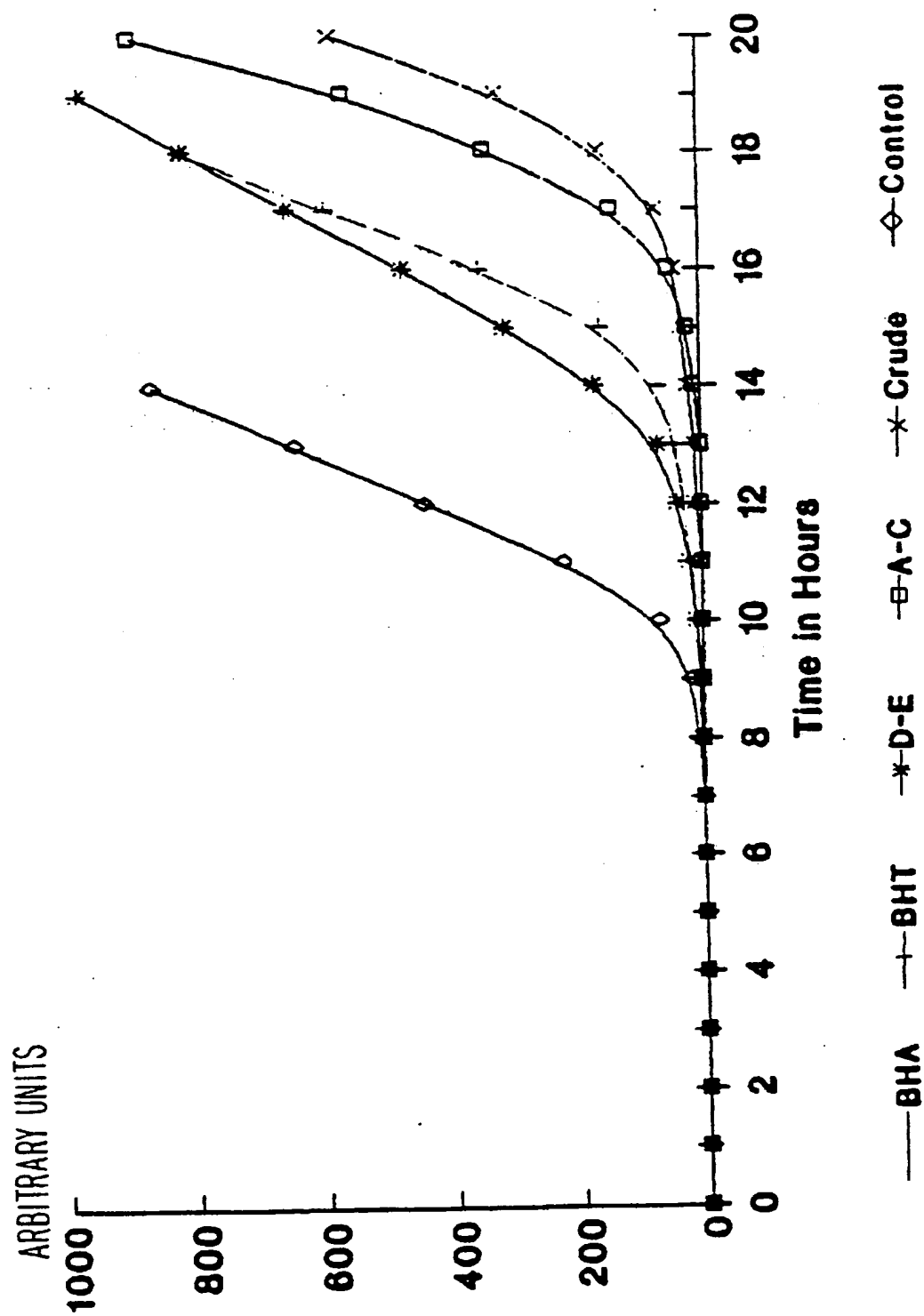
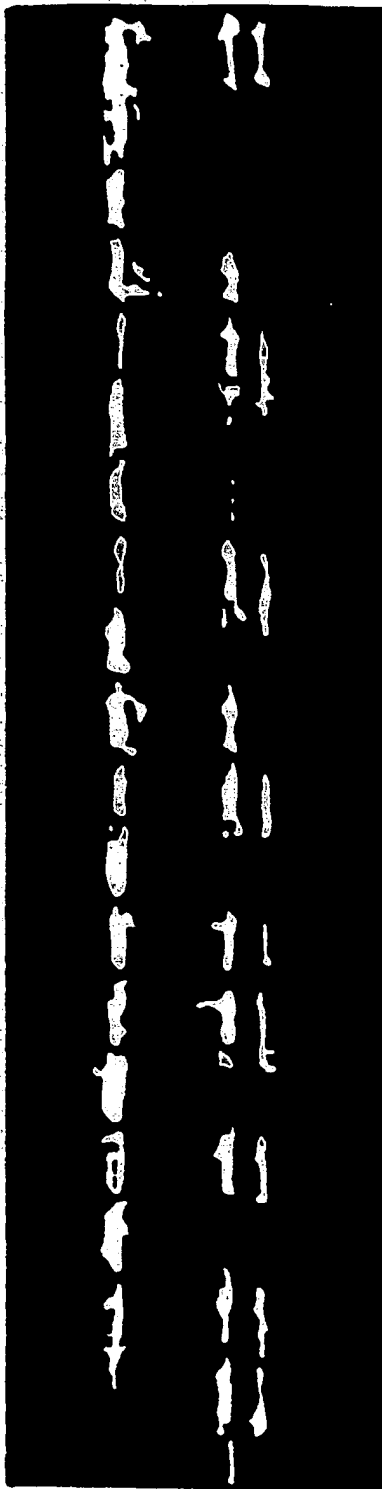


FIG. 17

	FRACTION A		FRACTION B		FRACTION D		FRACTION E		FRACTION D		FRACTION E		FRACTION D		FRACTION E		
	0.5	5.0	0.5	5.0	0.05	0.5	0.05	0.5	0.05	0.5	0.05	0.5	0.05	0.5	0.05	0.5	
M																	
C																	



LANES 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

LANE 1 CONTAINS 0.5 μ g OF MARKER (M) MONOMER-LENGTH KINETOPLAST DNA CIRCLES. LANES 2 AND 20 CONTAIN KINETOPLAST DNA THAT WAS INCUBATED WITH TOPOISOMERASE II IN THE PRESENCE OF 4% DMSO, BUT IN THE ABSENCE OF ANY COCOA PROCYANIDINS (CONTROL -C). LANES 3 AND 4 CONTAIN KINETOPLAST DNA THAT WAS INCUBATED WITH TOPOISOMERASE II IN THE PRESENCE OF 0.5 AND 5.0 μ g/mL COCOA PROCYANIDIN FRACTION A. LANES 5 AND 6 CONTAIN KINETOPLAST DNA THAT WAS INCUBATED WITH TOPOISOMERASE II IN THE PRESENCE OF 0.5 AND 5.0 μ g/mL COCOA PROCYANIDIN FRACTION B. LANES 7, 8, 9, 13, 14 AND 15 ARE REPLICATES OF KINETOPLAST DNA THAT WAS INCUBATED WITH TOPOISOMERASE II IN THE PRESENCE OF 0.05, 0.5 AND 5.0 μ g/mL COCOA PROCYANIDIN FRACTION D. LANES 10, 11, 12, 16, 17, AND 18 ARE REPLICATES OF KINETOPLAST DNA THAT WAS INCUBATED WITH TOPOISOMERASE II IN THE PRESENCE OF 0.05, 0.5 AND 5.0 μ g/mL COCOA PROCYANIDIN FRACTION E. LANE 19 IS A REPLICATE OF KINETOPLAST DNA THAT WAS INCUBATED WITH TOPOISOMERASE II IN THE PRESENCE OF 5.0 μ g/mL COCOA PROCYANIDIN FRACTION E.

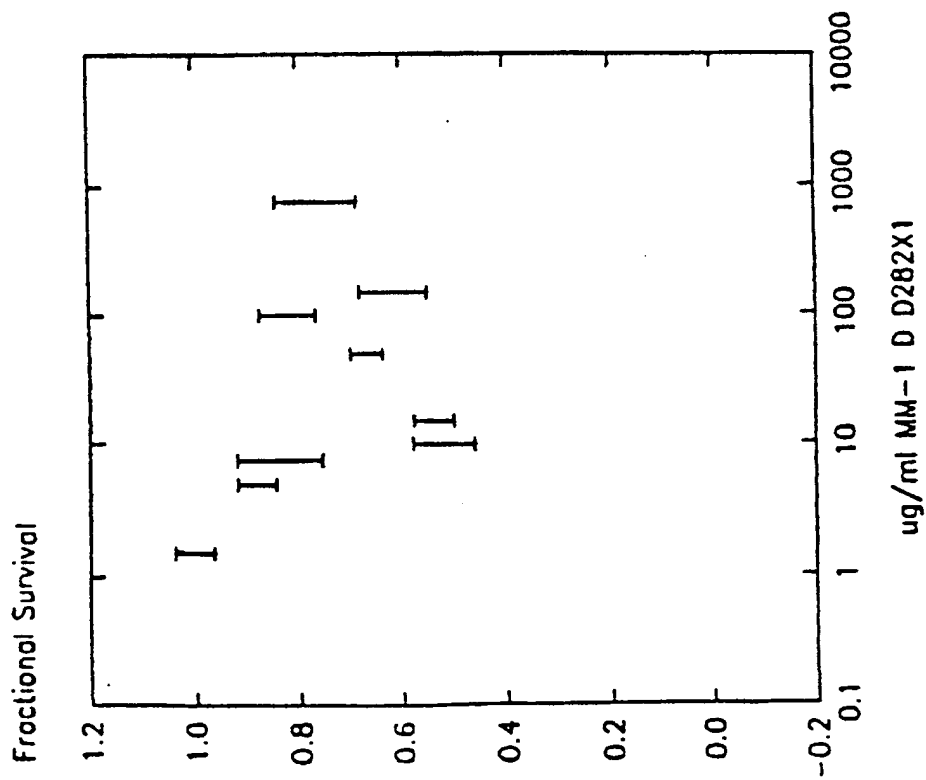


FIG. 18A

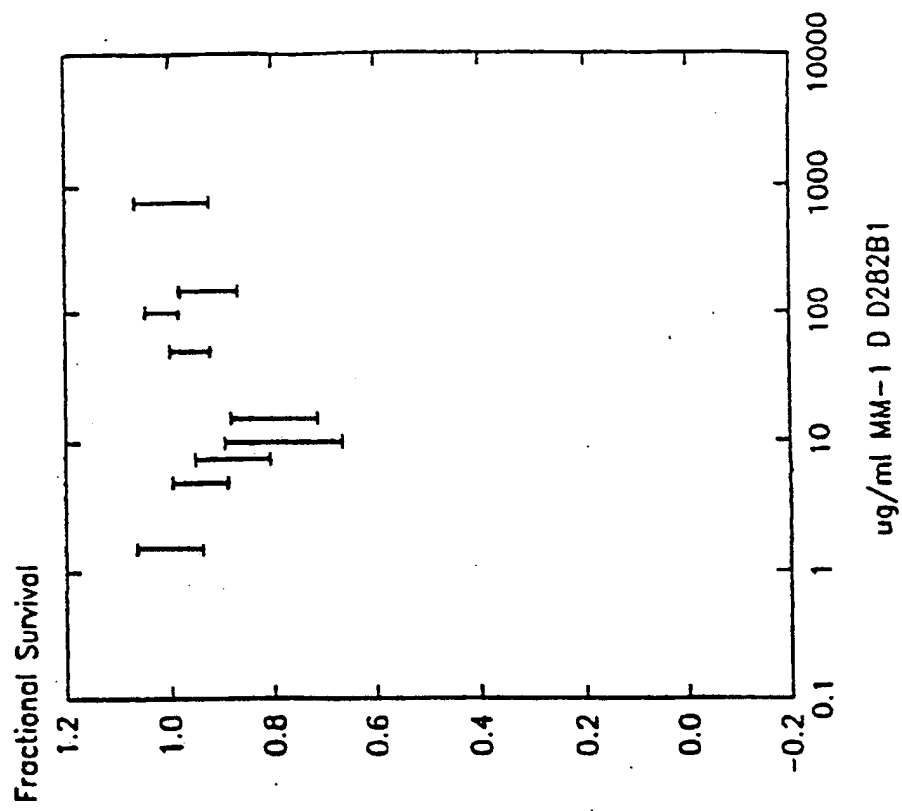


FIG. 18B

FIG. 19

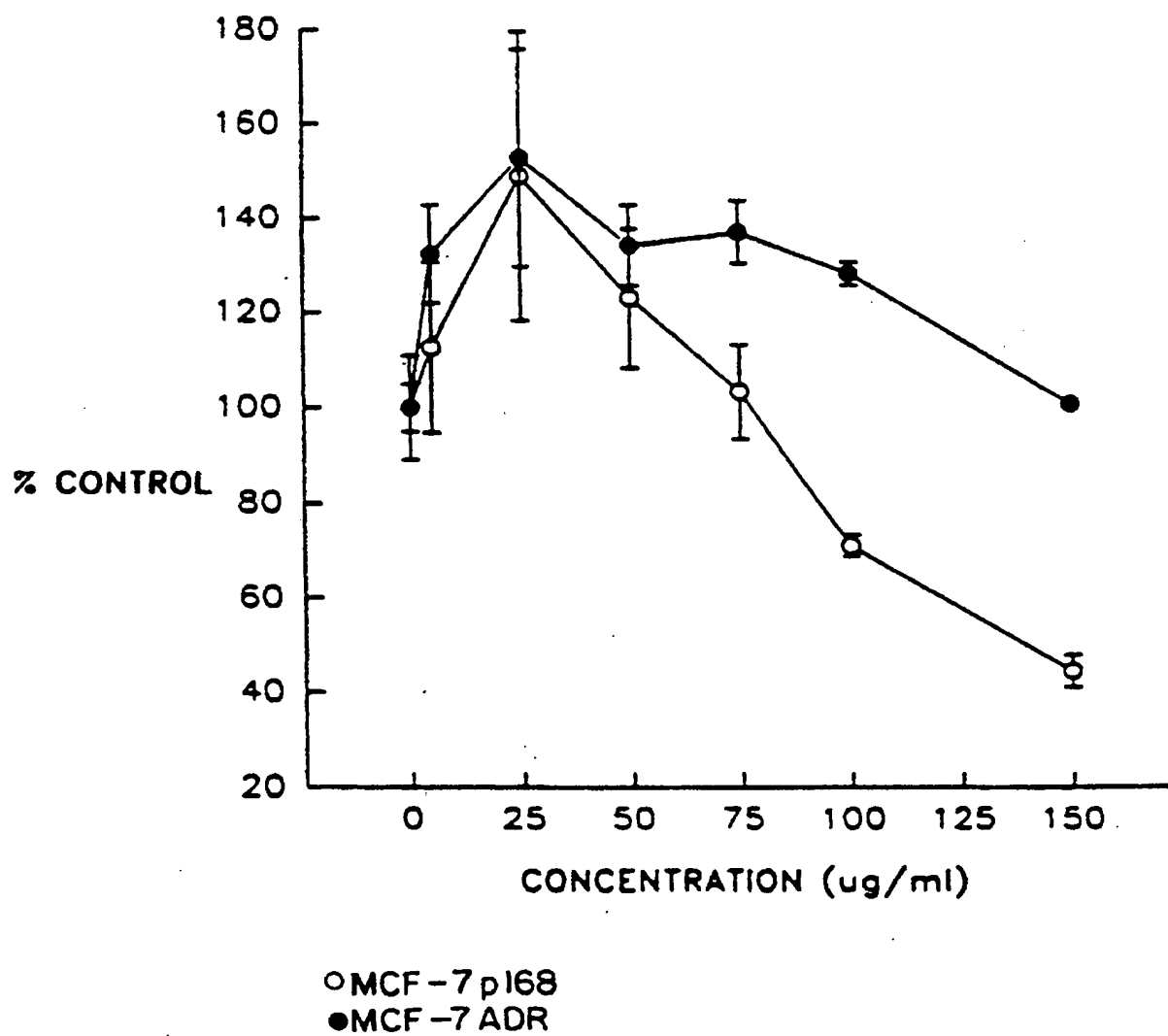


FIG. 20

